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THE IBIS,

A MAGAZINE OF GENERAL ORNITHOLOGY.

EDITED BY

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VOL. V. 1863.

> "Ibimus indomiti venerantes Ibida sacram,
> Ibimus incolumes qua prior Ibis adest."

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PREFACE.

AGAIN the proprietors of 'THE IBIS' have the pleasure of tendering their best thanks to all those who have assisted them in carrying on the Magazine. At the same time they must express their regret at not receiving from their own countrymen at home more communications respecting the birds of the British Islands. While the ornithology even of the most remote regions of the globe is engaging the increased attention of both travellers and resident naturalists, there seems to be some ground for fearing lest the labourers in the more limited field afforded by our native birds should slacken their efforts, and allow this branch of the study to fall behind, when compared with the rapidly advancing researches of their more enterprising brethren.

Since the last volume of 'THE IBIS' was published, a meeting of the British Ornithologists' Union has been held, at which Mr. A. R. WALLACE (having returned among us with the intention of permanently residing in the United Kingdom) has been elected an Extra-Ordinary Member, and the vacancy thus caused among the Honorary Members of the 'Union' has been filled by the election of Mr. ROBERT SWINHOE.

PHILIP LUTLEY SCLATER
(*Editor*).

11, Hanover Square,
Sept. 12th, 1863.

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ERRATA ET EMENDANDA.

Page 31, line 19, *for* "Plate II." *read* "Plate I."
Page 119, line 26, for "*bazlei*" read "*bayleii.*"
Page 208, line 13, for "*shah*" read "*schach.*"
Page 438, line 24, for "*candidissima*" read "*vermiculata.*"
Page 439, line 11, *for* "never" *read* "rarely."

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THE IBIS.

No. XVII. JANUARY 1863.

I.—*Catalogue of the Birds of India, with Remarks on their Geographical Distribution.* By Edward Blyth, Curator of the Asiatic Society's Museum, Calcutta. Part I., containing *Scansores* and *Raptores.*

[This catalogue will include, besides the birds of India proper and Cashmere (to which Mr. Jerdon confines his attention in his work now in preparation), the species found in Ceylon, Assam, the British Burmese territories, and the Malayan peninsula, down to Singapore, the Andaman and Nicobar Islands, and what little is known of the Ornithology of the Maldives and Laccadives.]

Order SCANSORES.

Fam. PSITTACIDÆ.

Genus Palæornis, Vigors (including *Belocercus,* Müller).

1. P. alexandri: *Psittacus alexandri,* L. (Edwards, B. pl. 292. f. 1.)

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 18.

Hab. The Alexandrian Parrakeet inhabits the hilly regions of all India, from the sub-Himalayas to Ceylon, inclusive, with those of Assam, Sylhet, Arakan, and the Tenasserim provinces as low as Amherst province. According to Dr. Mason, "it is found in the provinces Amherst, Pegu, and Arakan; but I never saw it," he remarks, "in Tavoy or Mergui." Neither did I observe it in the interior of the province of Martaban, nor towards the coast upon the hills near Moulmein. It has been received from Siam, and also from the Andaman Islands *. In Nepâl,

---

* A living specimen, however; very possibly a native of India that had been taken from Calcutta to Port Blair in the first instance.

Mr. Hodgson states that "it inhabits the Sâl-forest exclusively, and is not known to the Parrot-tamers." It is the ordinary Parrakeet of the Punjâb. In the peninsula of India it appears to be somewhat rare; but, in Ceylon, Mr. E. L. Layard "found it in countless thousands at Battacalsa, nesting in the cocoa-nut palms, and resorting to them by night in vast flocks. I procured a specimen or two," he adds, "at Maleth, in the central provinces; and I shot a single bird at Gillymalle." The very young are brought in considerable numbers to Calcutta, the earliest towards the close of February, and another batch of them in April, being doubtless the second brood; many old birds also. They come from the Midnapur jungles chiefly, as I am assured, though some probably are from the Rajmáhal and other proximate hills. Buchanan Hamilton states that this species "frequents the Sunderbáns, but comes to the neighbourhood of Calcutta when the crop of rice is ripe" (MSS.). If so (and the authority of that great observer is unquestionable), there can be little doubt that the flocks which visit this vicinity come rather from the hill-jungles westward of the delta; and it is not improbable, but consistent rather with daily observation of the habits of the birds of this genus, that they regularly return to their accustomed roosting-places in the hills every evening, however great may be the distance *. That Sonnerat observed the Alexandrian Parrakeet wild in the Philippine Islands needs confirmation.

2. P. TORQUATUS: *Psittacus torquatus,* Boddaërt (Pl. Enl. 551). *Ps. cubicularis,* Hasselquist (?): *P. parvirostris,* Bp. (?): *P. layardi,* Blyth.

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 19.

Hab. "The Rose-ringed Parrakeet," writes Mr. Swainson, "is one of the few birds of Senegal whose geographic distribution extends from east to west. Of four specimens in very perfect plumage now before us, three are from Western Africa and one from Madras: between the first three of these there is no difference whatever in size; but that from the East Indies is considerably larger, the length of its wing, in fact, measuring 7 in., while that of the Senegal race is not quite 6 in."* The late H. E. Strickland, however, in a list of birds procured in Kordofan, remarks that "this species, which extends across Africa from Abyssinia to Senegal, is identical with specimens from India †." Col. Chesney, moreover, notices them in Syria as "abounding in the spring ‡." Of numerous Asiatic specimens examined (from Upper India, Bengal, Ceylon, Burmah, &c.), I have found the length of wing to be very regularly 6½ in., though a few old males attain to 7 in. According to Lieut. Irwin, "the Parrot and Maina are scarcely natives of Turkistan, or at least of the country around the Oxus §"—by which, I presume, he means that they do occur there as visitants.

---

* "All the Parrakeets love the shelter of hills, and breed there exclusively; though they wander a good deal in the cold weather, especially in the plains" (Hodgson). *P. torquatus* is so far an exception, that it breeds abundantly throughout the plains of India.

This is one of the commonest of Indian birds, inhabiting the plains chiefly, if not exclusively. It is found alike in Ceylon, the Deyra Doon, Assam, Sylhet, parts of Burmah, and the Malayan peninsula (to the latitude of Penang), preferring cultivated districts; and, so far as I have seen, it is the only Indian Parrakeet that affects the vicinity of human habitations, flocks of them often settling on buildings, especially if in gardens with trees about them, and a few pairs commonly breeding in suitable cavities about large buildings. It is the only species observed wild in the densely populous immediate neighbourhood of Calcutta; but in the nearest jungle-districts, more especially on hilly ground, it is replaced by *P. rosa*. The multitudes of them about some of the stations in the plains of Upper India, particularly where there are large avenues of trees (as at Allahabad), are indeed astonishing; and Mr. Layard's description of them in Ceylon will be familiar to the ornithological reader¶. In the dense forest-jungles of the hill-regions lying eastward of the Bay of Bengal it does not occur, though found in open country, as in Upper Pegu. In the Tenasserim provinces, remarks Dr. Mason, this species is seen in smaller companies than *P. javanicus*, which have not the same habit of simultaneous descent upon the rice-fields.

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* Nat. Libr., Birds of West Africa, ii. p. 175.

† Proc. Zool. Soc. 1850, p. 219.

‡ Journal of the Euphrates Expedition, i. pp. 443, 537.

§ Journ. As. Soc. viii. p. 1007.

¶ Ann. and Mag. Nat. Hist. xiii. (1854) p. 262.

3. P. COLUMBOIDES, Vigors (Jerdon, Madr. Journ. Lit. Sc. xi. p. 209. pl. 3; Ill. Ind. Orn. pl. 18).

Syn. *P. melanorhynchus*, Sykes (female or young). *Psittacus kienerii* et *Conurus sagittifer columboides*, Bourj. Perr. t. 3, 3*a*.

Hab. Forests of Malabar; rare in the Nilgiris.

4. P. CALTHRAPÆ, Layard; Blyth, J. A. S. xviii. p. 801.

Syn. *P. gironieri*, Verreaux. *Psittacus viridicollis*, Cassin.

Hab. Mountains of Ceylon.

5. P. SCHISTICEPS, Hodgson, As. Res. xix. p. 178.

Syn. *Conurus himalayanus*, Lesson.

Hab. Common in the middle and lower regions of the Himalaya, extending westward to Pushut, where the late W. Griffith observed it in flocks; Nágá and Káshyá hills (Ya-ma-Doong range), Upper Pegu. Captured examples are not unfrequently brought to Dacca, but seldom to Calcutta.

6. P. ROSA: *Psittacus rosa*, Boddaërt, ex Buff. Pl. Enl. 888.

Syn. *P. bengalensis* et *P. cyanocephalus* (?), Gray, *vide* Brit. Mus. Cat. Psittacidæ (1859), pp. 20, 21.

Hab. The upland jungle-districts of all India proper, with Ceylon, Assam, Sylhet, Arakan, Pegu, Martaban, the Tenasserim provinces, and Siam*; replacing in the lower hills, for the most part, the *P. torquatus* of the plains of India, but also inhabiting the plains where clad with forest jungle, or otherwise well wooded. Buchanan Hamilton states that many breed in the Bengal Sunderbáns, "to which they return in the spring for that purpose. They come out upon the cultivated country in immense flocks so soon as the first crop of rice approaches to maturity; for this is their favourite food."—(MSS.) Great numbers of them are brought to Calcutta, and the small young during the month of April.

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* In the Catalogue of the India-house Museum, a specimen is noted from China, "from Reeves's Collection;" doubtless an Indian example, taken out probably from Calcutta. Is Sonnerat's Philippine species really different—the *P. cyanocephalus* of Gray?—[Mr. Swinhoe has examples of this bird from Canton, where it undoubtedly occurs as a feral species.—ED.]

7. P. CANICEPS, Blyth, J. A. S. xv. pp. 23, 51, 368 (Gould, B. As. pt. ix.).

Hab. Of this fine large species, a living male was obtained in one of the Nicobar Islands, with its wings and tail much mutilated; and the late Dr. Cantor procured a fine female in Penang.

8. P. JAVANICUS, Osbeck (Swainson, Zool. Ill. ser. 1, pl. 16).

Syn. *P. javanicus*, *P. vibrisca*, *P. barbatus* (?), *P. melanorhynchus*, et *P. borneus*, Gray, Brit. Mus. Cat. Psittacidæ (1859), pp. 23, 24.

Hab. This handsome species is particularly abundant in the Indo-Chinese countries, but is not seen wild on the western side of the Bay of Bengal, though *ponticerianus* is one of its synonyms; neither (according to the Dutch naturalists) does it inhabit Borneo, though *borneus* is another synonym; but it is common in Java and also in Siam, and thence to Assam, and westward to Nepâl, breeding in the hills and adjacent forests, and resorting in immense flocks to the open plains when the crops are ripening. In the forests of Upper Martaban I observed only this species and *P. rosa*, both in extreme abundance. Buchanan Hamilton observed them "in the woods near Gorruckpore." Vast numbers are obtained by the Calcutta bird-dealers, even when very young, which are brought from Tipperá and Chittagong, as I have been assured.

9. P. ERYTHROGENYS, Blyth, J. A. S. xv. pp. 23, 51, 368 (Gould, B. As. pt. ix.).

Syn. *P. nicobaricus*, Gould.

Hab. Andaman and Nicobar Islands.

10. P. LONGICAUDUS: *Psittacus longicaudus*, Boddaërt, ex Buff. Pl. Enl. 887.

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 22. *P. modestus*, Fraser, et *P. viridimystax*, Blyth.

Hab. Sumatra, Borneo, and the southern portion of the Malayan peninsula,—being the only *Palæornis* there met with, and having the same range of distribution as the two following species.

Genus PSITTINUS, Blyth, J. A. S. xi. p. 189*.

11. PS. MALACCENSIS: *Psittacus malaccensis*, Latham (Swainson's Zool. Ill. ser. 1, pl. 154).

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 91 = *Psittacula incerta* (Shaw).

Hab. Sumatra, Borneo, and the Southern Malayan peninsula, as the last, but extending northward, as somewhat of a rarity, to the southern Tenasserim provinces (Tavoy and Mergui). Its manners in captivity, and doubtless its wild habits, are altogether those of a *Palæornis*, to which genus it is most closely akin.

Subfam. ECLECTINÆ.

Genus LORICULUS, Blyth, J. A. S. xix. p. 236.

(*a.* Black-billed.)

12. L. GALGULUS: *Psittacus galgulus*, L. (Edwards, B. pl. 293. f. 1.)

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 54.

Hab. Sumatra, Borneo, and southern part of Malayan peninsula.

(*b.* Coral-billed.)

13. L. VERNALIS: *Psittacus vernalis*, Sparrm. (Sw. Zool. Ill. ser. 2, pl. 11).

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 54.

Hab. All the hilly parts of India, from the sub-Himalayan region to the extreme south, but not Ceylon; also the countries bordering the eastern shores of the Bay of Bengal, as far south as the Tenasserim provinces, where it is very abundant. It is likewise found in Java according to Dr. S. Müller, and a specimen received from Java is in the Calcutta Museum†; but is replaced in the Malayan Peninsula, Sumatra, and Borneo by *L. galgulus*. The great supply to the Calcutta bird-dealers comes chiefly from the Rajmáhal hills.

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* Barely separable from *Palæornis*, despite the short tail. I have now tame living specimens.

† One from the "Indian Archipelago" is also noted in Gray's 'Catalogue.'

14. L. COULACI: *Psittacula coulaci,* Lesson (Edwards, B. pl. 6).

Syn. *Vide* Gray, Brit. Mus. Cat. Psittacidæ (1859), p. 55 =*L. indicus*[*].

Hab. Ceylon.

Order RAPTORES.

Tribe I. DIURNÆ.

Fam. FALCONIDÆ.

Subfam. FALCONINÆ.

Genus FALCO, L.

(*a.* Jer- or Arctic Falcons: *Hierofalco,* Kaup.)

Remark.—The *Shanger* of Eastern works on Falconry, stated to be "very rarely met with in India—not more than one or two in a century, and then generally in the Punjâb," is a Jer-falcon of some species, probably *F. candicans,* Gmelin, and was doubtless brought to India from Northern Asia[†].

(*b.* Cliff Falcons.)

15. F. CALIDUS, Latham (*vide* J. A. S. xxviii. p. 281).

Syn. *F. peregrinus* of India, auctorum.

Hab. India generally (and Ceylon ?), as a winter visitant only, retiring beyond the Himalaya to breed, and resorting in the cold season much to watery situations, where it preys chiefly on the *Anatidæ.* I have seen no example from the eastern side of the Bay of Bengal. *F. peregrinus* (*verus*) should be looked for in the Himalaya; and it remains to ascertain whether this and *F. calidus* do not grade into each other in W. Asia*.

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[*] I reject the name *indicus,* because the race does not inhabit India, so far as known; although so common in Ceylon, where it replaces *L. vernalis.*

[†] In a Kâbul letter, published in the 'Lahore Chronicle,' we read that, on December 13th, 1858, "a letter was read from Sirdar Mahommed Ufzul Khân, from Bálkh, stating that the ruler of Kokhân had sent his son with a present of 90 horses, 90 camels, 9 *white Hawks,* 40 slave girls and boys, and 18,000 tilles, to the king of Bokhára, who had accepted them, and was greatly pleased."

A subsequent letter in the same newspaper states that, on the 9th January, 1859, "the Amir received two *Churkhs* [FALCO SACER?] from Bálkh, which were sent off to Peshâwur, for Major Lumsden."

These extracts serve to show how the Falcons of Middle Asia are still conveyed about.

16. F. PEREGRINATOR, Sund.† (Gould B. As. pl. 36).

Syn. *F. ruber indicus,* Aldrovandi; Sumatran *F. communis* (?), Gm., apud Raffles, Linn. Tr. xiii. p. 278. *F. herbæcola* (?), Tickell, J. A. S. ii. p. 570. *F. shaheen,* Jerdon. *F. sultaneus,* Hodgson.

Hab. India, Indo-China, and Malasia; Ceylon: rare in Lower Bengal‡. Arabia? Mesopotamia? Persia?

(*c.* Desert Falcons: *Gennaia,* Kaup.)

17. F. SACER, Schlegel (Gould, B. As. pl. 20; Hardw. Ill. Ind. Zool. pl. 25).

Syn. *F. lanarius,* of Temminck & Gould. *F. cherrug,* Gray.

Hab. Desert region of W. Asia and N. Africa; Punjâb; Sulimáni and Salt ranges.

18. F. JUGGER, Gray (Gould, B. As. pl. 1; Young, in Jerdon's Ill. Ind. Orn. pl. 44).

Syn. *F. luggar,* Jerdon. *F. thermophilus,* Hodgson.

Hab. Plains of India.

19. F. BABYLONICUS, Gurney ('Ibis,' 1861, p. 218).

Syn. *F. peregrinoides,* Gray, Cat. Hodgson's specimens. *F. peregrinator* (part.), Horsf. Catal.

Hab. Probably the same as *F. sacer,* but has doubtless been often overlooked and mistaken for the last; at least once obtained in Oude, and (it would seem) twice in Nepâl.

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* From Dr. Jerdon's forthcoming work on Indian Ornithology I quote (with permission) the following:—"The *Bhyri* does not breed in this country, nor ever, I believe, in the Himalayas, but migrates to the north in April, and returns about the first week in October. Mr. Layard mentions the Peregrine as breeding in Ceylon in January, and Dr. Adams says that he found the nest on a tree on the banks of the Indus, below Ferozepore; but I imagine that in both cases an old Laggar (*F. jugger*) has been mistaken for the *Bhyri*." Mr. J. H. Gurney is of opinion (expressed *in epistola*) that the true *F. peregrinus,* in addition to the *F. calidus,* will prove to occur occasionally in India.

† Prof. Sundeval obtained his specimen on board ship, in N. lat. 6°, between Ceylon and Sumatra, about seventy miles from the Nicobar Islands.

‡ In Horsfield's 'Catalogue of the Birds in the India-house Museum' (i. 17) a drawing of "*F. peregrinus*" is noticed, from "Sumatra. Presented by Sir T. S. Raffles." Also No. 19 of the same work, "*Falco* ——?" from Kumaon. Species undetermined. What is this?

Genus HYPOTRIORCHIS, Boie.

20. H. SEVERUS. (Temm. Pl. Col. 128.)

Syn. *Falco severus,* Horsfield. *F. aldrovandi,* Reinwardt. *F. guttatus,* G. R. Gray. *F. rufipedoides,* Hodgson.

Hab. Himalaya; Java; Philippines: visiting the plains of Bengal during the cold season, where it is somewhat rare.

21. H. SUBBUTEO. (Gould, B. E. pl. 22.)

Syn. *Falco subbuteo,* L. *F. barletta,* Daudin. *F. pinetarius,* Shaw. *F. hirundinum,* Brehm.

Hab. Europe, Asia, N. and S. Africa: visits Lower Bengal in the cold season, when it is far from common; and has been killed in S. India.

Genus (or subgenus) TURUMTIA, Blyth.

22. T. CHICQUERA (Gould, Cent. Him. B. pl. 2.)

Syn. *Falco chicquera,* Daudin.

Hab. India (common); Afghánistan.

Genus ÆSALON, Kaup.

23. Æ. REGULUS (Gould, B. E. pl. 24).

Syn. *Falco æsalon* et *F. lithofalco,* Gmelin. *F. regulus,* Pallas. *F. cæsius,* Meyer. *F. sibericus,* Shaw. *F. smirillus,* Savigny.

Hab. Europe and N. Asia; N. Africa; and Arctic America (Richardson). In India known only as a rare winter visitant towards the N.W. frontier of the Punjâb.

Genus TINNUNCULUS, Vieillot.

24. T. ALAUDARIUS (Gould, B. E. pl. 26).

Syn. *Accipiter alaudarius,* Brisson. *Falco tinnunculus,* L. *F. brunneus,* Bechst. *F. rufescens,* Swainson. *F. interstinctus,* M'Clelland. *Cerchneis murum, media,* et *tinnuncula,* Brehm.

Hab. Europe, Asia, and N. Africa; Java and Celebes: a common winter visitant in India.

25. T. SATURATUS, Blyth, J. A. S. xxviii. p. 277.

Syn. ? *T. moluccensis,* Schlegel, *vide* P. Z. S. 1860, p. 343.

Hab. Indo-Chinese region. (The adult male remains to be described*; while *T. alaudarius* is likewise found in Burmá.)

Genus (or subgenus) ERYTHROPUS, Brehm.

26. E. CENCHRIS. (Gould, B. E. pl. 29.)

Syn. *Falco cenchris,* Naumann. *F. tinnunculoides,* Schinz. *F. tinnuncularius,* Vieillot. *F. xanthonyx,* Natterer. *F. naumanni,* Fleisch.

Hab. "Abundant in many districts of the Lower Himalayas, and preys much on the Mountain Pipit" (A. L. Adams); Nilgiris: visits Lower Bengal during the rainy season.

27. E. VESPERTINUS. (Gould, B. E. pl. 23.)

Syn. *Falco vespertinus,* L. *F. rufipes,* Bechstein.

Hab. Europe, Asia, N. Africa: more diffused over India than the preceding species, and (like it) visits Lower Bengal during the rainy season. "The most common Hawk in Asia Minor" (Fellowes, in Ann. and Mag. Nat. Hist., Nov. 1839, p. 213).

Genus HIERAX, Vigors.

28. H. MELANOLEUCOS, Blyth, J. A. S. xii. p. 176 *bis.*

Hab. The only specimen that I have seen was brought alive in a cage from Assam. Another is noted dubiously in Horsfield's Catalogue, from that comprehensive region "India"†.

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* Since received. It differs less from the adult male of *T. alaudarius* than the females and young of the two races differ, but is still very deep coloured.

† Edwards's figure of "the Little Black and Orange Indian Hawk," pl. 108 (an example of which was brought in spirit "from Bengal in the East Indies"), upon which figure are founded *Falco cærulescens,* L., and *F. bengalensis,* Brisson, appears not to have been verified by the discovery of a second specimen, nor is a *Hierax* known to inhabit Bengal; but I am nevertheless of opinion that a peculiar and distinct species is represented by that figure, which may yet be recovered, and the more probably as *six* species of this genus are now recognized, and of these only a single specimen (for certain) is known of *H. melanoleucos.* In P. Z. S. 1860, p. 343, "*H. cærulescens*" is noted as an inhabitant of the Moluccas—*H. fringillarius* being probably intended.

29. H. EUTOLMOS, Hodgson.

Syn. *H. bengalensis,* Blyth, J. A. S. xii. p. 179 *bis. Bengal Falcon,* var. A, Latham.

Hab. Nepâl; Sikhim; Assam; Arakan; Pegu, and Tenasserim provinces (where it is rare).

30. H. FRINGILLARIUS. (Drap. Dict. Class. d'Hist. Nát. pl. 21; Pl. Col. 37.)

Syn. *Falco fringillarius,* Drapiez. *H. malayensis,* Strickland. Malayan *H. cærulescens,* auctorum.

Hab. Malayan peninsula and Western Indonesia generally; replaced by other species in the more eastern islands: northward it extends to the southernmost Tenasserim province of Mergui.

Subfam. PERNINÆ (Cuckoo-Hawks).

Genus BAZA, Hodgson.

31. B. LOPHOTES. (Pl. Col. 10.)

Syn. *Falco lophotes,* Temm. *Lepidogenys lathami,* Gray. *B. syama,* Hodgson. *Lophotes indicus,* Lesson.

Hab. India generally; rarer to the south: Ceylon; Burmá. Not uncommon, during the rainy season, in Lower Bengal.

32. B. REINWARDTII (Müller, Verh. Aves, t. 5).

Syn. *Falco* (*Lophotes*) *reinwardtii,* S. Müller. *Lophastur jerdoni,* Blyth. *Aviceda sumatrensis,* Lafresnaye. *Lepidogenys subcristatus* (?), Gould.

Hab. Malayan peninsula (rare) and archipelago; Australia?

Genus PERNIS, Cuvier.

33. P. CRISTATA, Cuvier. (Pl. Col. 44.)

Syn. *Falco ptilorhynchus,* Temminck. *P. ellioti,* Jameson. *P. maculosa, torquata, ruficollis,* et *atrogularis,* Lesson. *P. bharatensis,* Hodgson. *P. apivora* of India, auctorum.

Hab. India generally; Indo-Chinese and Malayan regions: not rare in Lower Bengal.

Obs.—Specimens from S. India, Ceylon, and Malasia appear to have constantly a well-developed occipital crest, attaining to a length of about 2¼ in., which is merely indicated, and sometimes not at all present, in examples from the Himalaya and Bengal.

Genus MACHÆRHAMPHUS, Westerman.

34. M. ALCINUS, Westerm. (Bijd. t. d. Dierk. i. fig. p. 29).
Hab. Malayan peninsula (*non vidimus*).

Subfam. ELANINÆ.

Genus ELANUS, Savigny.

35. E. MELANOPTERUS (Lev. Ois. d'Afr. pl. 36).

Syn. *Falco melanopterus,* Daudin. *F. clamosus,* Shaw. *F. sonninensis* et *F. vociferus,* Latham. *E. cæsius,* Savigny. *E. minor,* Bonap.

Hab. Africa; S. Asia and its archipelago; straggling rarely into the S. of Europe: common in India.

Subfam. CIRCAËTINÆ (Snake Eagles).

Genus CIRCAËTUS, Vieillot.

36. C. GALLICUS. (Pl. Enl. 413; Gould, B. E. pl. 13.)

Syn. *Falco gallicus,* Gmelin. *F. leucopsis,* Bechstein. *F. longipes,* Nilsson. *Aquila brachydactyla,* Meyer. *A. leucamphomma,* Borkh. *A. pygargus,* Brisson. *C. leucopsis* et *C. anguina,* Brehm.

Hab. Europe, Asia, and Africa: common on the plains of India, and preying chiefly on snakes.

Genus SPILORNIS, Gray.

37. S. CHEELA (Gould, Cent. Him. B. pl. 1)*.

Syn. *Falco cheela,* Daudin. *Hæmatornis undulatus,* Vigors. *Circaëtus nipalensis, mithilensis, tavayensis,* et *maculatior,* Hodgson. *Buteo bacha,* Franklin et Sykes. *B. melanotis,* Jerdon (young). *Hæmatornis spilogaster,* Blyth (intermediate plumage).

Hab. India generally, and Ceylon; Andaman Islands; Indo-

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* After this species should come
37*. S. ELGINI. *Hæmatornis elgini,* Tytler, MS.
Hab. Andaman Islands. (See Mr. Blyth's letter below.)—ED.

Chinese countries: common, preying much on frogs, which it clutches in the mud; hence its feet are generally clothed with mud.

38. S. BACHA (Lev. Ois. d'Afr. pl. 13).

Syn. *Falco bacha,* Daudin. *F. bido,* Horsfield. *F. albidus,* Cuv.

Hab. Malayan peninsula and archipelago. Barely separable from the last.

Subfam. CIRCINÆ (Harriers).

Genus CIRCUS, Lacépède.

(*a. Pygargus,* Kaup.)

39. C. ÆRUGINOSUS (Pl. Enl. 424, 460; Gould, B. E. pl. 32, and Yarrell's Br. B. i., both from Indian specimens!).

Syn. *Falco æruginosus,* L. *F. rufus,* Gmelin. *F. arundinaceus,* Bechstein. *F. krameri,* Kram. *Accipiter circus,* Pallas. *Acc. Circus rufus* et *Acc. Circus palustris,* Brisson. *C. variegatus,* Sykes. *C. rufus,* var. *indicus,* et *C. sykesi,* Lesson, Indian race. *Konta Falcon, Muskooroo Falcon,* and *Rufous-eared Falcon,* Latham. *Honey Buzzard?,* Tickell, J. A. S. ii. p. 570.

Hab. Europe, Asia, and Africa; common in India. (*N.B.* The plumage of the adult male, as figured by Gould and Yarrell, is of ordinary occurrence in India, but does not appear to have been observed in Europe!)

(*b. Strigiceps,* Bonap., et *Glaucopteryx,* Kaup.)

40. C. CYANEUS (Edw. B. pl. 8; Gould's B. E. pl. 33).

Syn. *Falco cyaneus,* L. ♀ *F. pygargus,* L. &c. (*vide* Gray's Brit. Mus. Cat. Accipitres (1848), pp. 78, 79).

Hab. Europe, N. Africa, N. and Middle Asia; N. America (?): in India known only as a winter visitant in the N.W. and sub-Himalayan region.

Remark.—The American race, *C. uliginosus* (Gmel.), according to Dr. Schlegel, "se distingue, dans tous les âges, du Busard St. Martin (*C. cyaneus*) d'Europe, par des tarses plus élevés. Le vieux mâle a ordinairement toutes les parties inférieures, à partir de la poitrine, ornées des taches nombreuses, soit orbiculaires, soit transversales, d'un brun ferrugineux." Sir W. Jardine, however, could not distinguish some Bermudan specimens from *C. cyaneus* of Europe. (*Vide* Contr. Orn.) Neither does Mr. G. R. Gray regard the N. American Harrier as distinct from *C. cyaneus,* in his Brit. Mus. Cat. of Accipitres of 1848.

41. C. SWAINSONII, A. Smith (Gould's B. E. pl. 34).

Syn. *C. pallidus,* Sykes. *C. albescens* et *Falco cyaneus,* var. *a,* Lesson. *C. dalmaticus,* Rüppell. *Falco æquifer,* Cuvier, MS. *F. herbæcola,* Tickell.

Hab. S.E. Europe, Asia, and Africa: common in India as a winter visitant.

42. C. CINERASCENS (Gould's B. E. pl. 35).

Syn. *Falco cinerascens* et *cineraceus,* Montag. *F. montagui,* Vieillot. *C. cinerascens* v. *pallidus* et *C. nipalensis,* Hodgson.

Hab. Europe, Asia, and Africa: all India, with Ceylon; common as a winter visitant.

43. C. MELANOLEUCUS (Lev. Ois. d'Afr. pl. 32; Pennant's Indian Zoology, pl. 2).

Syn. *Falco melanoleucus,* Pennant.

Hab. India generally, with Ceylon; and Indo-Chinese countries: common as a winter visitant; but not mentioned by Pallas in his Zoology of Russian Asia! Afghánistan.

Obs. In this species the sexes are alike; and the young would appear not to differ in plumage*.

Subfam. ACCIPITRINÆ (Hawks).

Genus ACCIPITER, Ray.

44. ACC. NISUS. (Pl. Enl. 467, 412; Gould's B. E. pl. 18.)

Syn. *Falco nisus,* L. *F. lacteus,* Gmelin. *F. nisosimilis,* Tickell, J.A.S. ii. p. 571†. *Acc. fringillarius,* Ray. *A. dussumieri,* apud Jerdon, Madr. Journ. Lit. Sc. x. p. 84. *Acc. maculatus,* Brisson. *Acc. subtypicus,* Hodgson. *Nisus communis,* Cuvier. *N. elegans, N. fringillarum,* et *N. peregrinus,* Brehm. *Bassura Falcon,* Latham.

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* What is the *Circus,* No. 34 of Horsfield's Bird Catalogue, from China and also Afghánistan?

† The late Prince of Canino considered this to be distinct (Comptes Rendus, xli. (1855) p. 652):—" Aux nombreuses races de vrais *Accipiter*

Hab. Europe, Asia, and N. Africa: a winter visitant in India, where it is numerous in the hilly parts; rare, though occasional, on the alluvium of Lower Bengal. I have not seen it from the eastern side of the Bay of Bengal; but it is recorded as an inhabitant of Japan.

45. Acc. nisoides (Blyth, J. A. S. xvi. p. 727, xxi. p. 359).

Syn. *Acc. fringillarius,* var., Vig. Appendix to Memoir of Sir T. Stamford Raffles, p. 549.

Hab. Malayan peninsula; Sumatra?

Remark.—Mr. G. R. Gray is utterly mistaken in referring this as a synonym of the next species. It closely resembles the preceding one, but is smaller, with trivirgate throat; and I doubt if the male has ever any rufous colouring. My friend Dr. Jerdon very strongly suspected that it is the *Khándesrá* of Indian falconers, of the existence of which (as a distinct Indian species) he is assured, from the concurrent testimony of all native falconers, although he has not succeeded hitherto in procuring a specimen. It may be mistaken for *Acc. nisus*; but never for *Acc. virgatus.*

(*Hierospiza,* Kaup.)

46. Acc. virgatus (Pl. Col. 109 ♂; Jerdon's Ill. Ind. Orn. pl. 4. p. 29).

Syn. *Falco virgatus,* Temminck. *Acc. besra,* Jerdon. ♀ *A. fringillarius,* Jerdon, Catal. *A. dussumieri,* Sykes. *A. affinis,* Hodgson, Gray's Zool. Misc. 1844, p. 18. *Nisus* (nec *Sparvius*)

ajoutez *Acc. nisosimilis,* Tickell (1833), de l'Inde, qui semble identique au *dussumieri* de Jerdon, mais non à celui de Temminck, si voisin du *badius,* chacun ayant appliqué ce nom à sa guise, mon ami le colonel Sykes au *virgatus,*" &c. All the specimens which I have seen from various parts of India, from the Himalaya to the south, and inclusive of Lower Bengal, were unmistakeable *Acc. nisus* (verus). The Prince, it also appears, distinguished *Micronisus badius* from *M. dussumieri*; but I doubt if any such distinction could be traced in an adequate series of specimens.

minutus, Lesson*. *F. minutus* (?), L. *F. brissonianus* (?), Shaw.

Hab. India generally, but chiefly the hilly parts; also Malasia: rare and accidental in Lower Bengal.

Genus MICRONISUS, G. R. Gray.

47. M. BADIUS (Pl. Col. 308, 336).

Syn. *Falco badius,* Gmelin. *F. brownii,* Shaw. *F. dussumieri,* Temm. (not of Sykes's nor Jerdon's Catalogues). *Accipiter dukhunensis,* Sykes. *A. scutarius* et *A. fringillaroides,* Hodgson. *Nisus malayensis,* Meyer. *Calcutta Sparrow-Hawk* and *Chippuck Falcon,* Latham.

Hab. India generally; Indo-Chinese and Malay countries, being very numerous throughout India and Ceylon: not uncommon in Afghánistan; Cashmere; Assam; Siam; China?†

Genus ASTUR, Bechstein.

48. A. PALUMBARIUS (Pl. Enl. 418, 423, 461; Gould's B. E. pl. 17).

Syn. *Falco palumbarius* et *F. gentilis,* L. *F. gallinarius,* Gmelin. *F. albescens,* Bodd. *Accipiter astur,* Pallas. *Astur gallinarum,* Brehm.

Hab. Europe and Asia; rare in N. Africa: in India confined, or very nearly so, to the sub-Himalayas.

(*Lophospiza,* Kaup.)

49. A. TRIVIRGATUS (Pl. Col. 303).

Syn. *Falco trivirgatus,* Reinwardt. *A. indicus,* Hodgson. *A. palumbarius,* apud Jerdon, Catal. *A. cristatus,* G. R. Gray. *Spizaëtus rufitinctus,* M'Clelland.

Hab. India, Indo-China, and Malasia; being confined to the hilly parts.

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* Referred by Dr. Pucheran to "*Nisus soloënsis,*" in the Rev. Zool. 1850, p. 210,—a species assigned by him to Sumatra on the authority of Duvaucel, and to the *Coromandel coast* and *Ceylon* on that of Leschenault, but which I have never seen or heard of even from the Malayan peninsula.

† *Vide* note to *Accipiter nisus,* p. 14.

Subfam. THRASAËTINÆ.

Genus LIMNAËTUS, Vigors.

50. L. NIPALENSIS.

Syn. *Nisaëtus nipalensis,* crested var., Hodgson, J. A. S. v. p. 229. *N. pulcher,* id., J. A. S. vi. p. 361 et xii. p. 305. *Falco orientalis* (?) et *F. lanceolatus* (?), Temm. & Schleg.

Hab. Himalaya, chiefly eastward; Khásyas; also mountains of Ceylon, and probably those of S. India (rarely).

51. L. CRISTATELLUS. (Pl. Col. 282; Jard. & Selb. Ill. Orn. pl. 66.)

Syn. *Falco cristatellus,* Temminck. *F. Lathami,* Tickell (?). *F. cirratus* (?), Gmelin.

Hab. The peninsula of India, and Ceylon; rare in the Himalayas.

52. L. NIVEUS. (Pl. Col. 127; Horsf. Zool. Res. in Java, pl. 36.)

Syn. *Falco niveus,* Temminck. *F. limnaëtus* et *Limn. horsfieldi,* Vigors. *Nisaëtus pallidus,* Hodgson, et *N. nipalensis,* crestless var., Hodgson, J. A. S. v. p. 229. *Lake Eagle, Bauj Eagle,* and probably *Jerwied Eagle,* Latham.

Hab. E. Himalaya; Bengal; Assam; Indo-Chinese and Malayan countries, where it is generally common.

53. L. CALIGATUS.

Syn. *Falco caligatus,* Raffles. *Nisaëtus alboniger,* Blyth, J. A. S. xiv. p. 173, xix. p. 335.

Hab. Malayan peninsula; Sumatra.

54. L. KIENERII. (Mag. de Zool. 1855, Ois. pl. 35.)

Syn. *Astur kienerii,* Geoffr. *Spizaëtus albogularis,* Tickell: Blyth, J. A. S. xi. p. 456.

Hab. Himalaya; Central India: rare.

Subfam. AQUILINÆ.

Genus EUTOLMAËTUS, Blyth (*Nisaëtus,* Hodgson).

55. EU. BONELLII. (Pl. Col. 288; Gould's B. E. pl. 7; Jerdon's Ill. Ind. Orn. pl. 1.)

Syn. *Falco bonellii,* Temminck. *F. ducalis,* Lichtenstein. *F.*

bellicosus (?), Daudin. *F. armiger* (?), Shaw. *Aquila intermedia,* Bonelli. *Aq. bifasciata,* Vieillot, Enc. Méthod. p. 1192 (teste G. R. Gray). *Nisaëtus grandis,* Hodgson, J. A. S. v. p. 230. *N. niveus,* Jerdon, Catal. *Genoese Eagle,* Latham.

Hab. S. of Europe and Asia; N. (and S.?) Africa: in India and Ceylon, confined chiefly to the hilly parts, where it is far from rare.

Genus AQUILA, Meyer.

56. AQ. CHRYSAËTOS. (Pl. Enl. 409, 410; Gould's B. E. pl. 6.)

Syn. *Falco chrysaëtos, F. fulvus, F. melanaëtos,* et *F. canadensis**, L. *F. niger* et *F. americanus,* Gmelin. *F. melanonotus,* Latham. *F. regalis,* Temminck, Man. d'Orn. (1815) p. 10 (nec Pl. Col. 495, teste G. R. Gray). *Aq. nobilis,* Pallas. *Aq. regia,* Lesson. *Aq. melanaëtos,* Brehm. *Aq. daphænia,* Hodgson.

Hab. Mountainous regions of the northern temperate zone, including the Himalaya; but not N.E. Africa, according to Rüppell.

57. AQ. IMPERIALIS. (Sav. Descr. de l'Egypte, i. t. 12; Gould's B. E. pl. 5.)

Syn. *Falco imperialis,* Temminck. *F. mogilnik,* Gmelin. *F. ferox* et *Brown-backed Eagle,* Latham. *Aq. heliaca,* Savigny. *Aq. bifasciata,* J. E. Gray†. *Aq. nipalensis,* Hodgson, As. Res. xviii. pt. 2. p. 13. pl. 1. *Aq. chrysaëtos,* Jerdon, Catal.

Hab. Hill regions of S.E. Europe and Asia‡.

58. AQ. FULVESCENS, Gray (Hardw. Ill. Ind. Zool. ii. pl. 29).

Syn. *Falco obsoletus,* Lichtenstein. *Aq. fusca* et *Aq. punctata,* Gray, ibid. *Aq. vindhiana,* Franklin§.

Hab. Plains of India: abundant.

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* *Aq. canadensis* is recognized as distinct by the Americans (*vide* Proc. Acad. Philad. 1859, p. 185).

† *Vide* A. L. Adams in P. Z. S. 1858, p. 470.

‡ "Extremely numerous in the Punjâb, preying, with Vultures, on carrion, and very numerous about the battle-fields" (L. C. Stewart).

§ Distinct from *A. nævioides* of Africa, which is larger and more powerful (*vide* J. A. S. xxiv. p. 253).

59. Aq. nævia. (Savigny, Descr. de l'Egypte, Ois. t. 1, et t. 2. f. 1; Gould's B. E. pl. 8.)

Syn. *Falco nævius, F. maculatus,* et *F. undulatus,* Gmelin. *F. melanaëtos,* Savigny. *Aq. clanga,* Pallas. *Aq. bifasciata,* Hornsch. *Aq. pomarina,* Brehm. *Aq. planga* et *Spizaëtos fuscus,* Vieillot. *Spotted Eagle* and *Brown-backed Eagle,* var. *a,* Latham.

Hab. E. of Europe, Asia, and N. Africa: rare in W. Europe, including the British Islands; common in the Bengal Sunderbáns; found likewise in the Himalaya (abundantly), and in C. and S. India: not on the plains, like the last, but in wooded and watery situations.

60. Aq. hastata.

Syn. *Morphnus hastatus,* Lesson. *Spizaëtus punctatus,* Jerdon. *Limnaëtus unicolor,* Blyth, J. A. S. xii. p. 128.

Hab. Common in the Bengal Sunderbáns; and found likewise in E. Bengal generally, and in C. and S. India.

Remark.—This and the preceding three species vary greatly in plumage. No. 58 is a miniature of No. 57; No. 59 is larger than No. 58, but less robust; and the present species, with about the same linear dimensions, is, again, of more feeble conformation. A practised eye readily distinguishes either, in any phase of colouring. No. 58 is, to a great extent, a devourer of eggs and callow broods—an habitual nest-robber, like No. 59.

Genus Neopus, Hodgson (also *Heteropus,* Hodgson; *Onichaëtus,* Kaup; *Ictinaëtus,* Jerdon, nec Kaup).

61. N. malaiënsis. (Pl. Col. 117.)

Syn. *Falco malaiënsis,* Reinwardt. *Aquila* et *Heteropus* et *Neopus perniger,* Hodgson. *Nisaëtus? ovivorus,* Jerdon. *Black Eagle,* Jerdon, Catal.*

Hab. S.E. Himalaya; Nilgiris; Malayan countries.

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* The Eagle, "about the size of the *Aq. chrysaëtos* (colour black, but head and neck white, tail long and wedge-shaped)," seen at Rupshoo in Ladakh by Mr. A. L. Adams (P. Z. S. 1858, p. 471), very decidedly cannot have been the present species, as suggested by Mr. Adams. Possibly it might have been the great *Haliaëtus pelagicus* (Pallas).

Genus HIERAËTUS, Kaup.

62. H. PENNATUS. (Pl. Col. 33; Gould's B. E. pl. 9.)

Syn. *Falco pennatus,* Gmelin. *F. lagopus,* Bengal var., Latham. *Aquila minuta,* Brehm. *Aq. morphnoides* (?), Gould, B. Austr. i. *Spizaëtus milvoides,* Jerdon. *Butaquila strophiata,* Hodgson.

Hab. E. Europe; Asia; Africa; Australia (?); India generally; Ceylon; Indo-Chinese region.

Remark.—The Australian race, *H. morphnoides,* is stated to differ only in possessing a rudimentary occipital crest: this is constantly present in Indian specimens.

Subfam. BUTEONINÆ*.

Genus ARCHIBUTEO, Brehm.

63. A. HEMIPTILOPUS, Blyth, J. A. S. xv. p. 1 (Calc. Journ. N. H. viii. p. 89. pl. 5. f. 1).

Syn. *A. cryptogenys,* Hodgson, *loc. cit.*

Hab. Sikhim; Tibet.

Genus BUTEO, Cuvier.

64. B. AQUILINUS, Hodgson: Blyth, J. A. S. xiv. p. 176.

Syn. *B. leucocephalus,* Hodgson, P. Z. S. 1845, p. 37. *Falco asiaticus* (?), Latham, Ind. Orn. p. 14. *F. hemilasius* (?), Temm. & Schleg. *B. strophiatus,* Hodgson, test. Kaup et G. R. Gray. *Eagle Buzzard,* Swinhoe, Ibis, iii. p. 326, from N. China (?).

Hab. Nepal (G. R. Gray); Tibet; China (?); Japan (?).

65. B. CANESCENS, Hodgson, J. A. S. xii. p. 308.

Syn. *B. longipes,* Jerdon. *Nasal Falcon,* Latham.

Hab. India generally; plains and lower hills. In Lower Bengal, found chiefly above the tideway of the rivers.

66. B. VULGARIS, Bechstein (Gould's B. E. pl. 14).

Syn. *Falco buteo,* L. *F. glaucopis,* Merrem. *F. variegatus, versicolor, cinereus,* et *obsoletus,* Gmelin. *B. pojana,* Savi. *B.*

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* Barely separable from *Aquilinæ* as here constituted; in which opinion I agree with the late Prof. Macgillivray. Some systematists seem disposed to refer to *Aquilinæ* all *Falconidæ* of a certain size.

albus, Daudin. *B. mutans* et *fasciatus,* Vieillot. *B. septentrionalis, medius,* et *murum,* Brehm. *B. communis,* Cuvier. *B. swainsonii,* Pr. Bonaparte. *B. montanus,* Rüppell. *B. rufiventer,* Jerdon. *B. japonicus,* Schlegel.

Hab. Northern hemisphere; rare, and to the northward only in America. The loftier hills only in India. Common in the N.W. Himalaya.

67. B. PLUMIPES, Hodgson, *vide* J. A. S. xiv. p. 2; P. Z. S. 1845, p. 37.

Syn. *B. pygmæus,* Blyth, J. A. S. xiv. p. 177.

Hab. Central region of Nepal; Tenasserim provinces?*

Genus POLIORNIS, Kaup.

68. P. TEESA. (Hardwicke, Ill. Ind. Zool. pl. 30.)

Syn. *Circus teesa,* Franklin. *Astur hyder,* Sykes. *Zuggun Falcon,* Latham. *P. fasciatus* (?), A. Hay, Madr. Journ. L. Sc. xiii. p. 146. *Astur barbatus* (?), Eyton, Ann. N. H. 1845, p. 227.

Hab. Plains of India. Seldom met with on the mud-soil of Lower Bengal, though appearing immediately this is quitted. Tenasserim provinces (common); Malayan peninsula. "Not seen in the Punjâb or W. Himalaya" (Adams).

Subfam. HALIAËTINÆ.

Genus PANDION, Savigny.

69. P. HALIAËTUS. (Gould's B. E. pl. 12.)

Syn. *Falco haliaëtus,* L. *F. carolinensis, F. cayanensis,* et *F. arundinaceus,* Gmelin. *F. piscator,* Brisson. *Aquila piscatrix,* Vieillot. *Aq. balbuzardus,* Duméril. *P. fluvialis,* Savigny. *P. americanus,* Vieillot. *P. alticeps* et *P. planiceps,* Brehm. *P. indicus,* Hodgson. *Bengal Osprey,* Latham.

Hab. Of general distribution; the Australian race (*P. leucocephalus,* Gould, which, according to Prof. Schlegel, is also found in Japan) alone slightly differing. Common throughout India, in all suitable localities*.

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* The probably identity of *B. pygmæus* with *B. plumipes* was suggested to me by Dr. Jerdon.

Genus PONTOAËTUS, Kaup.

70. P. ICHTHYAËTUS. (Horsfield, Zool. Res. in Java, pl. 34.)

Syn. *Falco ichthyaëtus,* Horsfield. *Haliaëtus plumbeus,* Hodgson. *Ichthyaëtus bicolor,* G. R. Gray. *I. horsfieldi* et *I. hucarius,* Hodgson. *Pandion lineatus,* Jerdon, Cat. p. 8.

Hab. India; Indo-Chinese and Malayan countries.

71. P. HUMILIS. (Temm. & Müller, Ois. t. 6.)

Syn. *Falco (Pandion) humilis,* S. Müller, Verh. p. 48. *Ichthyaëtus nanus,* Blyth, J. A. S. xi. p. 202, et xii. p. 304.

Hab. Malayan peninsula; Sumatra.

Genus BLAGRUS, Blyth.

72. B. LEUCOGASTER. (Pl. Col. 49; Gould's B. Austr. i. pl. 3.)

Syn. *Falco leucogaster,* Gmelin. *F. dimidiatus,* Raffles. *F. albicilla,* var., Latham. *F. blagrus* of S.E. Asia and Australia, auctorum†. *Ichthyaëtus cultrunguis,* Blyth (the senior adult). *Haliastur sphenurus,* Gould (the young). *Kumpa-maur Eagle* (the senior adult) and *Maritime Eagle* (the adult), Latham.

Hab. India; Malasia; Moluccas; New Guinea; Australia; the Andaman and Nicobar Islands: chiefly the sea-coast and estuaries of the great rivers.

Genus HALIAËTUS, Savigny (*Cuncuma,* in part, Hodgson).

73. H. FULVIVENTER, Vieillot. (Pl. Col. 8; Hardwicke's Ill. Ind. Zool. pl. 19, the young.)

Syn. *Aquila leucorypha,* Pallas‡ (?). *Falco macei,* Temminck.

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* The Osprey is a very peculiar form among the *Falconidæ,* and wants the projecting superorbital bone which is (I believe) so characteristic of all the rest. The next genus approximates *Pandion* in the adaptation of structure to piscivorous habits, but is nevertheless very distinct, and much more nearly affine to *Haliaëtus.*

† The true *Blagre* of Levaillant (*Falco blagrus,* Daudin) is now believed to be the young of *Haliaëtus vocifer* (*vide* Cassin, Proc. Philad. Acad. 1859, p. 31).

‡ This name would hold precedence. Mr. Newton, on comparing the

H. albicilla, Vigors & Horsfield. *H. ossifragus*, Raffles (?). *H. albipes* et *H. lanceolatus*, Hodgson. *H. unicolor*, Gray.

Hab. Northern India generally: abundant in Lower Bengal. Common in Kashmir and along the Indus; Indo-Chinese and Malay countries (?).

Genus HALIASTUR, Selby.

74. H. INDUS. (Pl. Enl. 416.)

Syn. *Falco indus*, Boddaërt. *F. ponticerianus*, Gmelin. *Haliaëtus garruda*, Lesson. *Milvus rotundicaudatus*, Hodgson (the young).

Hab. India, with Ceylon; Indo-Chinese and Malayan countries; extremely common: replaced by an allied species in Australia, which extends to New Guinea, Batchian, Amboyna, and Ternate (P. Z. S. 1860, p. 342; Journ. Proc. Linn. Soc. ii. p. 154).

Genus MILVUS, Cuvier.

75. M. GOVINDA, Sykes.

Syn. *M. cheela*, Jerdon. *Haliaëtus lineatus*, Gray (the young).

Hab. S.E. Asia and its islands; extremely common. In Lower Bengal it disappears during the rains, with the exception of an occasional straggler. It abounds in the lower ranges of the Himalaya (*vide* Adams in P. Z. S. 1858, p. 471).*

Fam. VULTURIDÆ.

Subfam. VULTURINÆ.

Genus VULTUR, L. (as restricted).

76. V. MONACHUS, L. (Edwards, B. pl. 290; Pl. Col. 426; Gould's B. E. pl. 2.)

Syn. *V. cinereus* et *V. cristatus*, Gmelin. *V. arrianus*, Lapeyr.

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sterna of *H. fulviventer* from India and of *H. leucoryphus* (?) from the Crimea, found a considerable difference between them (Ibis, 1861, p. 223).

* The *M. melanotis*, Temminck, from China and Japan, appears to me to be a distinct race, however nearly akin. The beak is somewhat larger; and the back is spotted in the adult, which is never the case with *M. govinda*.

V. imperialis, Temminck. *V. vulgaris,* Daudin. *V. niger,* Brehm. *Ægypius niger,* Savigny.

Hab. Mountainous parts of Europe and Asia; Himalaya; rare on the plains of India.

Genus Otogyps, G. R. Gray.

77. O. calvus. (Pl. Col. 2.)

Syn. *Vultur calvus,* Scopoli. *V. ponticerianus,* Daudin.

Hab. India generally, and Burmah. Does not go far into the mountains (*vide* Adams, P. Z. S. 1858, p. 469).

Genus Gyps, Savigny.

(*a.* With fourteen tail-feathers.)

78. G. fulvus. (Pl. Enl. 426; Gould's B. E. pl. 1.)

Syn. *Vultur fulvus,* Gmelin. *V. persicus,* Pallas*. *V. vulgaris, V. kolbii,* et *V. percnopterus,* Daudin. *V. albicollis,* Linderm. *V. trincalos,* Bechstein. *V. indicus* of Jerdon's Catal. and of A. L. Adams, P. Z. S. 1858, p. 468.

Hab. Mountainous regions of Europe and Asia; Himalaya: replaced in Barbary, the Pyrenees, and Sardinia by *G. occidentalis*; and by *G. vulgaris,* Savigny (*G. rüppellii,* Pr. Bonap.), in Egypt and Abyssinia.

79. G. indicus. (Gray & Mitchell, Gen. Birds, pl. 3.)

Syn. *Vultur indicus,* Scopoli & Latham. *V. tenuiceps* et *V. tenuirostris,* Hodgson. *V. kolbii* of A. L. Adams (?), P. Z. S. 1858, p. 470.

Hab. India and Malay countries.

(*b.* With twelve tail-feathers.)

80. G. bengalensis. (Hardwicke's Ill. Ind. Zool.)

Syn. *Vultur bengalensis,* Latham (the young). *V. indicus,* apud Temminck (the young). *V. leuconotus,* Gray (the adult).

Hab. India generally; Indo-China; a summer visitant in Afghanistan; Sennaar (Rüppell).

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* *Vide* Journ. R. Geogr. Soc. x. p. 507.

Subfam. NEOPHRONINÆ.

Genus NEOPHRON, Savigny.

81. N. PERCNOPTERUS. (Pl. Enl. 407, 429; Gould's B. E. pl. 3.)

Syn. *Vultur percnopterus,* L. (nec Pallas). *V. leucocephalus* et *V. fuscus,* Gmelin. *V. ginginianus* et *V. albus,* Daudin. *V. meleagris,* Pallas. *V. fuscus,* Boddaërt. *V. leucocephalus,* Brisson. *Percnopterus ægyptiacus,* Stephens.

Hab. Warmer regions of Europe, Asia, and Africa: abundant on the plains of India; rare and accidental below the tideway of the rivers in Lower Bengal. A summer visitant in Afghanistan.

Fam. GYPAËTIDÆ.

Genus GYPAËTOS, Storr.

82. G. BARBATUS. (Gould's B. E. pl. 4.)

Syn. *Vultur barbatus,* L. *V. barbarus* et *Falco magnus,* Gmelin. *V. leucocephalus* et *V. melanocephalus,* Meyer. *G. grandis,* Storr. *G. alpinus, G. castaneus,* et *G. aureus,* Daudin. *G. himalayanus,* Pearson*. *G. hemachalanus,* Hutton. *Phene ossifraga,* Savigny. *Polypteryx cupido,* Hodgson†.

Hab. High mountains of Europe and Asia; Himalaya; Afghanistan; Salt and Sulimáni ranges. '*Golden Eagle*' of Anglo-Indian residents in the Himalaya (*vide* Adams, in P. Z. S. 1858, p. 467).

Tribe II. NOCTURNÆ.

Fam. STRIGIDÆ.

Subfam. BUBONINÆ‡.

Genus HUHUA, Hodgson.

83. H. ORIENTALIS. (Pl. Col. 174, 229.)

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* "I see them both with and without the pectoral band" (the late Lieut. Trotter, *in epistola*).

† Prince Bonaparte recognises as distinct *G. orientalis* (*meridionalis,* Brehm), from the Pyrenees, Sardinia, Arabia, and Abyssinia, and *G. nudipes,* from Africa.

‡ A Nepalese *shikári* in the employ of Mr. Hodgson, and brought by him to Calcutta, very positively recognized the *Bubo maximus* as a species

Syn. *Strix orientalis,* Horsfield. *Str. sumatrana,* Raffles. *Str. strepitans,* Temminck. *Bubo* et *Huhua nipalensis,* Hodgson*.

Hab. Himalaya; Indo-Chinese and Himalayan countries.

84. H. PECTORALIS, Jerdon (Madr. Journ. Lit. Sc. x. p. 89, pl. 1.)

Hab. S. India.

Genus URRUA, Hodgson (*Ascalaphia,* Is. Geoffroy ?).

85. U. BENGALENSIS. (Gould's Cent. Him. Birds, pl. 3.)

Syn. *Otus bengalensis,* Franklin. *Bubo cavearius* et *Urrua cavearia,* Hodgson.

Hab. India generally, and Ceylon; extending to Afghanistan; but not met with below the tideway of the rivers in Lower Bengal.

86. U. COROMANDA. (Hardwicke, Ill. Ind. Zool. pl. 20.)

Syn. *Strix coromanda,* Latham. *Urrua umbrata,* Blyth.

Hab. Most parts of India: common in Lower Bengal.

Genus ASIO, Brisson (*Otus,* Cuvier).

87. A. OTUS. (Pl. Enl. 438; Gould's B. E. pl. 40.)

Syn. *Strix otus,* L. *Str. soloniensis,* Gmelin. *Str. deminuta,* Pallas. *Otus albicollis,* Daudin. *O. europæus,* Stephens. *O. communis,* Lesson. *O. vulgaris,* Fleming. *O. sylvestris, O. arboreus,* et *O. gracilis,* Brehm. *O. wilsonianus,* Lesson. *O. americanus,* Bonap. (American form).

Hab. Europe and N. Asia; Himalaya (rare); N. Africa; N. America.

88. A. BRACHYOTUS. (Pl. Enl. 438; Gould's B. E. pl. 40.)

Syn. *Strix brachyotus,* L. *Str. ulula, S. ægolius,* et *S. accipitrina,* Pallas. *Str. arctica,* Sparrm. *Str. tripennis,* Schrank.

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well known to him, and would not listen to the suggestion that his bird might have been *Urrua bengalensis.* [*Bubo maximus* certainly occurs in Tibet. See P. Z. S. 1860, p. 99.—ED.]

* According to the late Prince of Canino, "*Bubo nipalensis,* Hodgson, est une espèce à ajouter au genre *Huhua*: elle est le double d'*orientalis,* Horsfield (*strepitans,* Temminck), avec laquelle on l'a confondu" (Comptes Rendus, xli. (1855) p. 655). Mr. Cassin unites *Strix orientalis* and *Bubo nipalensis,* but regards *H. pectoralis* as distinct.

Str. palustris, Siemss. *Str. caspia,* Shaw. *Str. brachyura,* Nilsson. *Otus palustris* et *agrarius,* Brehm.

Hab. Europe, Asia, Africa, and N. and S. America; India generally, visiting the plains in winter *.

Genus EPHIALTES, Keys. & Blasius.

89. EPH. SUPERCILIARIS. (Cassin, Journ. Phil. Acad. ii. pl. 12.)

Syn. *Strix superciliaris,* Vieillot, *vide* Rev. Zool. 1849, p. 19(?). *Str. rufescens,* Horsfield. *Ephialtes sagittata,* Cassin.

Hab. Malayan peninsula and archipelago (not India).

90. EPH. LEMPIJI. (Pl. Col. 99.)

Syn. *Strix lempiji,* Horsfield. *Str. noctula,* Temminck. *Scops javanicus,* Lesson. *Sc. lettia,* Hodgson. *Sc. lettioides* et *griseus,* Jerdon.

Hab. India, China, and the Malay countries.

Remarks.—Specimens of this bird from the sub-Himalayas, Assam, Sylhet, Arakan, and the Tenasserim provinces, also China, are generally (but not always) larger than those from S. India and Ceylon; while examples from the Malay countries are, for the most part, deeply tinged with rufous brown.

91. EPH. BAKKAMÆNA.

Syn. *Strix bakkamæna,* Pennant. *Scops sunia* (chestnut variety) and *Sc. pennata* (grey variety), Hodgson. *Sc. malayensis,* A. Hay. *Eph. spilocephalus* (?), Blyth, J. A. S. xv. p. 8 (young var. ?).

Hab. India, with Ceylon; Indo-Chinese region and Malayan peninsula. Not rare in Lower Bengal †.

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* *O. brachyotus,* of Peale, from Háwâi, is *Asio sandvicensis,* Bloxam.

† Barely separable from the European *Eph. scops* (L.). The *Eph. rutilus* (Pucheran), Rev. Zool. &c. 1849, p. 299, would seem to be a similar pyrrhous variety of the *E. sunia* of Hodgson. What is *Eph. gymnopodus,* Gray, from "India," which (according to Kaup) has the tarsi over the toes naked, and the toes completely naked,—otherwise resembling *Eph. scops,* but having shorter tarsi and wings? *Hab.* "India," according to Mr. Gray's Catalogue, "presented by J. R. Reeves, Esq." *Qy.* from China (*vide* Pr. Bonap., in Comptes Rendus, xli. (1855) p. 653, genus *Acnemis,* Kaup).

Genus KETUPA, Lesson.

92. K. FLAVIPES.

Syn. *Cultrunguis flavipes,* Hodgson.

Hab. Himalaya only (so far as hitherto observed).

93. K. CEYLONENSIS. (Hardwicke's Ill. Ind. Zool. pl. 31.)

Syn. *Strix ceylonensis,* Latham. *Str. leschenaultii,* Temminck. *Str. hardwickii,* Gray. *Str. dumeticola,* Tickell. *Cultrunguis nigripes,* Hodgson.

Hab. India generally, with Ceylon; Assam; Arakan; Tenasserim provinces: very common in Lower Bengal; not so in W. Himalaya.

94. K. JAVANENSIS, Lesson. (Pl. Col. 74.)

Syn. *Strix ketupa,* Horsfield. *Str. ceylonensis,* apud Temminck.

Hab. The common species of the Malayan peninsula and archipelago: rare in Arakan*.

Subfam. SURNINÆ.

Genus ATHENE, Boie.

95. ATH. CUCULOIDES. (Gould's Cent. Him. Birds, pl. 4.)

Syn. *Noctua cuculoides,* Vigors. *N. auribarbis,* Hodgson.

Hab. Himalaya; Assam; Arakan; Tenasserim provinces; China.

96. ATH. RADIATA.

Syn. *Strix radiata,* Tickell. *Athene erythropterus,* Gould. *Noctua perlineata,* Hodgson. *N. cuculoides,* Jerdon, Catal. *Ath. undulatus,* Blyth, J. A. S. xi. p. 457. *Ath. cuculoides,* Phillips, P. Z. S. 1857, p. 86 (?).

Hab. Most parts of India; sub-Himalayan region: never on the alluvium of Lower Bengal, but appears immediately this is quitted in a westerly direction.

97. ATH. MALABARICA, Blyth, J. A. S. xv. p. 281.

Syn. *Ath. castanoptera,* Jerdon's Cat., Supp.

Hab. S. Malabar (Travancore, Cochin, &c.).

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* Mr. Cassin gives "India" as the locality for a specimen of this bird; but I have never heard of its occurrence on the western side of the Bay of Bengal, and know but of one instance of its having been obtained so high as in Arakan. When will writers cease to cite the word "India" so very vaguely?

98. ATH. CASTANOPTERA. (Pl. Col. 98.)

Syn. *Strix castanoptera,* Horsfield. *Str. spadicea,* Reinwardt. *Ath. castanotus,* Blyth.

Hab. Ceylon; Tenasserim (Helfer); Malayan peninsula (?); Java.

99. ATH. BRAMA. (Pl. Col. 68.)

Syn. *Strix brama,* Temminck. *Noctua indica,* Franklin. *N. tarayensis,* Hodgson. "*Athene indica,* Gould," Chesney's Expedition, i. p. 362.

Hab. Most parts of India, from the Punjâb to Burmah and Ceylon; Persia; W. Asia; Assam; Sylhet: never ascends into the hills.

100. ATH. NOCTUA. (Pl. Enl. 439; Gould, B. E. pl. 48.)

Syn. *Strix noctua,* Retzius, Faun. Suec. p. 85. *Str. nudipes,* Nilsson. *Str. passerina,* Lath. & Temm. *Ath. bactriana,* Blyth, J. A. S. xvi. p. 761. *Ath. gymnopus,* Hodgson*. *Noctua glaux,* Savigny. *Str. persica* (?), Vieillot (*vide* Rev. Zool. 1849, p. 18).

Hab. Europe; N. Africa, W. Asia; Afghanistan; rare in Himalaya†.

Genus TÆNIOPTYNX, Kaup.

101. T. BRODII.

Syn. *Noctua brodiei,* Burton. *N. tubiger,* Hodgson.

Hab. Himalaya (common).

Genus NINOX, Hodgson.

102. N. SCUTELLATUS. (Pl. Col. 289.)

Syn. *Strix scutellata,* Raffles. *Str. hirsuta,* Temminck. *Str.*

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* This species wants seeing to. There would seem to be two—*A. bactriana,* nobis (= *noctua* v. *nudipes*? = *meridionalis*?), and *A. gymnopus,* Hodgson (*vide* Bp. in Comptes Rendus, xli. (1855) p. 653).

† Himalayan specimens require to be compared with *Ath. meridionalis,* Brehm, the true "Bird of Minerva." *Str. sonneratii,* Temm. (Pl. Col. 21), is stated to be from Pondichery; but no such bird appears to inhabit India properly so called. It appertains to the genus *Athene.*

lugubris, Tickell. *Ninox nepalensis,* Hodgson. *Athene malayensis,* Eyton.

Hab. All India, with Ceylon; Indo-Chinese region; Malayan peninsula and archipelago; China.

Remarks.—Prince Bonaparte gives the Bornean and Japanese (*i. e.* Chinese ?) races as distinct species—var. *borneensis* et var. *japonica* of Schlegel. He also describes a *N. philippensis,* Compt. Rend. xli. p. 654; and approximates the Madagascar race to that of Japan.

Genus BULACA, Hodgson.

103. B. NEWARENSIS, Hodgson, As. Res. xix. p. 168; J.A.S.B. ii. p. 372.

Hab. Himalaya.

104. B. INDRANEE. (Gray & Mitch. Gen. Birds, pl. 14?)

Syn. *Strix indranee,* Sykes. *Bulaca monticola,* Jerdon.

Hab. S. India and Ceylon; Tenasserim provinces and Malayan peninsula.

105. B. SELOPUTO. (Pl. Col. 230.)

Syn. *Strix seloputo,* Horsfield. *Str. pagodarum,* Temminck.

Hab. Tenasserim provinces; Malayan peninsula and archipelago; Nicobar Islands.

106. B. SINENSIS. (Hardwicke's Ill. Ind. Zool. pl. 21.)

Syn. *Strix sinensis,* Latham. *S. orientalis,* Shaw. *Syrnium ocellatum,* Lesson.

Hab. Most parts of India, to foot of Himalaya: not Lower Bengal (at least, below the tideway of the rivers). Tenasserim provinces (Mergui).

Genus SYRNIUM, Savigny.

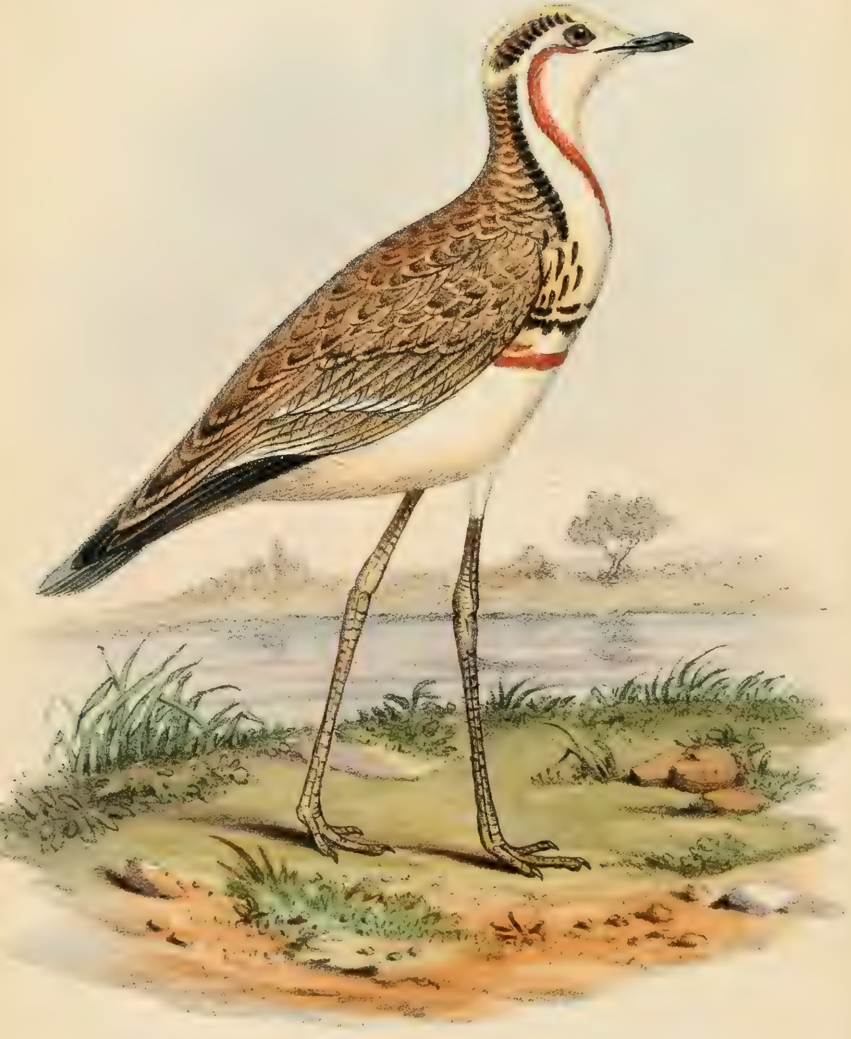
107. S. NIVICOLUM, Hodgson.

Hab. Himalaya (barely separable from the European *S. aluco*).

Subfam. STRIGINÆ.

Genus PHODILUS, Is. Geoffroy.

108. PH. BADIUS. (Horsfield's Zool. Res. in Java, pl. 37.)



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M & N Hanhart Imp^t

HEMERODROMUS CINCTUS.

Syn. *Strix badia,* Horsfield.

Hab. Nepal; Sikhim; Assam; Arakan; Tenasserim provinces; Malayan peninsula and islands.

Genus STRIX, L. (as limited).

109. STR. JAVANICA. (Gray & Mitch. Gen. Birds, pl. 15; Gould's Birds of Austr. i. pl. 31.)

Syn. *Str. javanica,* Gm. *Str. delicatula,* Gould. *Str. flammea* of India and S.E. Asia generally, auctorum.

Hab. India generally, and Ceylon, with S.E. Asia and its archipelago, extending to New Caledonia and Australia.

Genus SCELOSTRIX, Kaup.

110. SC. CANDIDA. (Jerdon's Ill. Ind. Orn. pl. 30.)

Syn. *Strix candida,* Tickell, J. A. S. ii. p. 572. *Str. longimembris,* Jerdon. *Str. javanica,* Phillips, P. Z. S. 1857, p. 87.

Hab. Plains of India; common in high grass: very rare on the mud-soil of Lower Bengal*.

II.—*Description of a new African Plover.*

By Baron TH. V. HEUGLIN†.

(Plate II.)

HEMERODROMUS CINCTUS, Heugl., sp. et gen. nov.

Avis hornotina. Supra fuliginosus, subtus albus, notæi plumis late et distincte rufo-ochraceo limbatis: fronte, stria lata verticali, loris, superciliis, fasciaque stricta nuchali ad oculos utrinque extendente albidis, plus minusve intensius rubente isabellino indutis; fascia nuchali delicate nigricante striolata; gutture fascia angusta pectus versus in apicem prolongata intense castanea circumdato; stria longitudinali per colli latera decurrente fusco-nigra; fascia lata basin colli antici circumdante ochracea, lateraliter nigricante striolata, infra nigro cincta; fascia altera angusta ventrali castanea; supracaudalibus, basi caudæ rectricibusque tribus exterioribus albis, harum secunda et tertia anguste fulvo bifasciatis; reliquis pallide fuliginosis, indistincte ferrugineo limbatis, apicibus albis; quarta macula pogonii interni et externi, quinta pogonii interni alba: remigibus nigro-fuscis indistinctius ferrugineo limbatis; primæ basi tota reliquarum parte basali pogonii interni albis; cubitalibus notæo pallidioribus, apicibus albo limbatis: subalaribus albidis, ex parte irregulariter fusco fasciatis: rostro nigro, tomiis pallidioribus; iride brunnea: pedibus pallide violacescenti-ochraceis. Long. tota 9″; latitudo ext. al. 18″; long. rostri et fronte 6″ 7‴; alæ 6″; caudæ 3″ 2‴; tarsi 2″ 3·3‴; digiti medii sine ungue 7″ 7‴; dig. lat. 4″ 8‴, poll. et lin. Gall.

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* The *Strix capensis,* A. Smith (S. African Zoology, Aves, pl. 45), is considered by Prof. Kaup to be synonymous with *Sc. candida*; but it is obviously a second species of the genus. Horsfield's *Strix capensis,* from a drawing by Dr. F. Buchanan Hamilton, refers, of course, to the Indian species.

† Communicated to the Editor by Dr. G. Hartlaub.

This Plover is nearly allied to *Cursorius* in form; but the top of the beak is less curved downwards, and the maxilla at the top is a little inflated: the nasal apertures are not oval, but rather cuneate and very much elongated. The second remex is somewhat longer than the first. The legs are very long, and scutellated on both sides. The three toes are rather lengthened, the middle and outer ones being connected by a faint indication of a membrane. The inner margin of the claw of the middle toe is distinctly dentated. The subcuneate tail consists of 12 rectrices.

The unique specimen here described was obtained near Gondokoro, on the White Nile, in the Bari country, in 5° N. lat. The bird appears to be rather rare.

III.—*Notes on the Birds of Egypt.* By S. STAFFORD ALLEN.

[Continued from vol. iv. p. 361.]

4. THE BUFF-BACKED HERON (*Herodias bubulcus*).

Perhaps the most conspicuous bird that catches the eye of the traveller in Egypt is the Buff-backed Heron (*Herodias bubulcus*; *Ardea russata*, Yarr. & Gould; *Bubulcus ibis*, Bonaparte), in its winter plumage of pure white, which is to be met with in flocks of from four or five to thirty, distributed all over the country.

These birds especially affect the society of cattle, and may be seen feeding about among the legs of the cows and buffaloes in the most fearless manner, like starlings in a flock of sheep, frequently perching on the backs of the lazy animals in the same way. The Arab name "Abou Gerdán" (father of flocks), the French "l'Héron Garde-bœuf," and the Latin specific appellation "*bubulcus*" all have reference to this marked peculiarity.

Contrary to the usual custom of the Herons and Egrets, most of which are piscivorous, the "Buff-backed" does not feed upon fish, but upon the various kinds of insects, particularly grasshoppers, which are so abundant in the rank herbage produced by the peculiar system of irrigation which obtains amongst the Arabs. They are consequently seldom seen near the water's edge. About dusk they retire to the trees to roost; and though I have occasionally seen them in the date-palms, they generally choose the Sycamore, or wild fig-tree, for that purpose.

It is frequently asserted that the Arabs consider this bird as *sacred*, and that killing one is looked upon as a serious offence; but I believe this is not the case, at least not in a *religious* sense. I have sometimes, on having shot one for a specimen, been reproached for so doing, much in the way that we should speak to any one who killed a robin; and I think that this more correctly represents the feeling on the point, although it is a hopeless task to try to make an Arab understand anything of an abstract nature.

During the winter the plumage of the Buff-backed Heron is of a creamy-white colour, with a small reddish-buff patch on the top of the head, the legs and feet being black. About the commencement of April, longer feathers, of a pale buff, begin to appear on the back, neck, and crest (the rest of the plumage remaining *in statu quo*). These continue to grow in length and deepen in colour until the end of May, by which time the summer dress is complete. At the same time the legs and feet change to a pale yellowish olive. The bill at all times is of an ochraceous yellow, and the irides vary in different specimens (probably according to age) from pale to bright yellow. The lore is greenish. The male is generally rather larger than the female, and the long feathers are a little more developed.

We did not meet with the nests of the Buff-backed Heron; and it seems probable that they are late breeders, as in those killed about the end of April the ovaries did not appear to be enlarged.

I purchased specimens of the eggs from the widow of the late M. Odascalchi, naturalist of Cairo, who had a large stock, and there seems no doubt of their genuineness. They are of the usual pale blue, vary considerably in size and shape, and have a very thin shell.

The Buff-backed Heron (*H. bubulcus*) is easily distinguished from the Little Egret, *H. garzetta,* even at a considerable distance, as the latter is almost invariably solitary, while its long, sharp, black bill contrasts strongly with the short, thick, yellow one of the former.

In consequence of its supposed sanctity among the Arabs, many people maintain that *H. bubulcus* is the true "Sacred Ibis," and no amount of proof to the contrary will make them think otherwise. I have never been able to hear of any one who has seen the *Ibis religiosa* in Egypt, and I only know of one instance in which the *I. falcinellus* occurred.

[To be continued.]

IV.—*Note on the Kestrel of Madagascar* (Tinnunculus newtoni).

By J. H. Gurney.

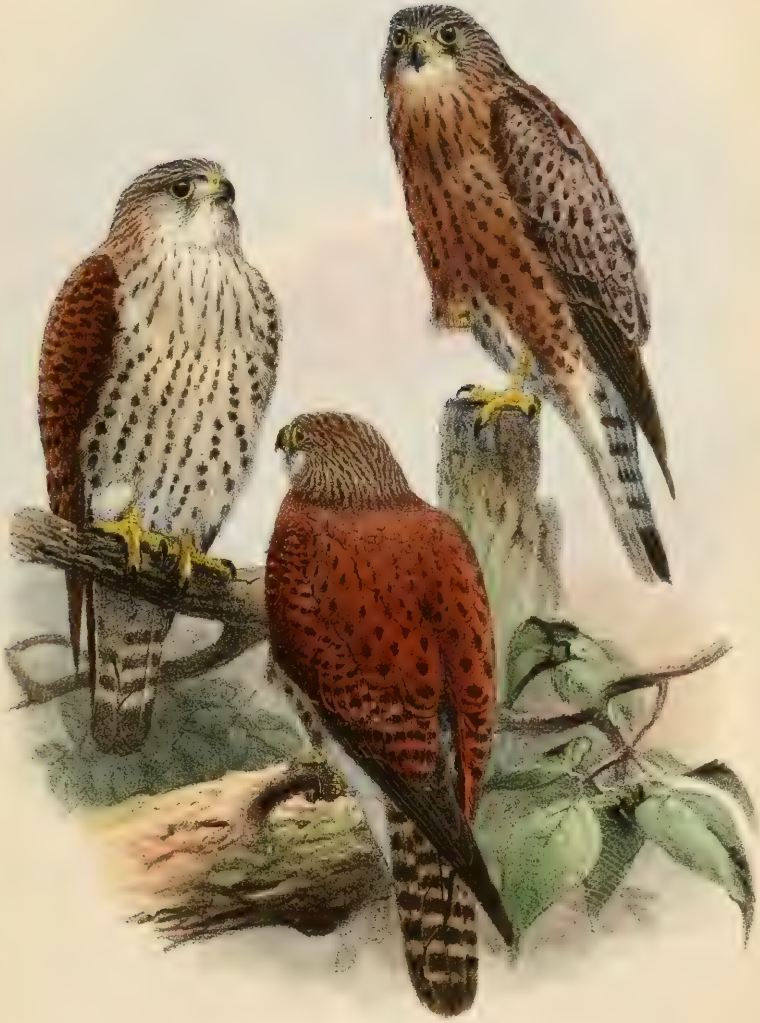
(Plate II.)

The Norwich Museum is indebted to the liberality of Mr. Edward Newton for a specimen of the *Tinnunculus gracilis* of Lesson, from the Seychelles Islands, and also for two Kestrels collected by him in Madagascar, and described under the same specific title of "*gracilis,*" in 'The Ibis,' vol. iv. p. 267.

The sex of the specimen from the Seychelles Islands, above alluded to, has not been noted, but I am disposed to consider it a male bird.

The two individuals from Madagascar are both marked as males by Mr. Edward Newton.

On comparing the two Madagascar Kestrels with the spe-



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Wolf del. et lith.

M & N Han

TINNUNCULUS NEWTONI

cimen from the Seychelles, I find such a difference of size and colouring as to lead me to believe that they are not examples of *Tinnunculus gracilis,* but that they belong to a distinct and undescribed species. The following Table will show the measurements of these birds as compared with *Tinnunculus gracilis,* and also with a male specimen of *Tinnunculus punctatus* from the Mauritius.

	Total length.	Length of wing from carpal joint.	Tarsus.	Middle toe with claw.
	inches.	inches.	inch.	inch.
Tinnunculus gracilis......	$9\frac{3}{4}$ *	6	$1\frac{1}{8}$	$1\frac{1}{8}$
Madagascar Kestrel:				
Specimen A, ♂	$10\frac{3}{4}$	$7\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{4}$
Specimen B, ♂	11			
Tinnunculus punctatus, ♂	$11\frac{1}{2}$	$7\frac{1}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$

From the above Table it will be apparent that the Madagascar Kestrel exceeds the Seychelles species (*T. gracilis*) in all the above dimensions, whilst it is itself exceeded by the Mauritius bird (*T. punctatus*) in all except the length of the wing from the carpal joint.

The colouring of the two birds sent from Madagascar is not precisely identical. In specimen A, the feathers on the upper part of the head and on the back of the neck are of a dark grey, slightly tinged with rufous, with a darker shaft-mark passing down the centre of each feather. The back and scapulars are rufous, of a tint paler than that of the same parts in *T. gracilis,* but darker than in *T. punctatus,* and much resembling the colour of the back in *T. rupicola* (Daud.). The scapulars are spotted with darker ovate spots, one at the end of each feather, which are larger in proportion as they are further removed from the bird's head and neck. The wing-feathers are of a brownish black, the primaries being barred with rufous on their inner webs, and the secondaries and tertiaries on both webs. On the secondary feathers, the brownish-black bars are broader than the rufous; but on the tertiaries this is reversed. The rump is bluish grey, with a darker sagittate mark on each feather. The upper side of the tail is of a blackish-brown tint, with seven lighter transverse bars; these are grey towards the upper part of the tail, but tinged with rufous towards the lower part. The cheeks and throat are white, with the exception of an indistinctly defined dark moustache extending downwards and backwards from the angle of the mouth. All the under parts are also white, with the exception of a slight rufous tinge on the breast, and of dark lanceolate shaft-marks on the feathers of that part and of the inside of the wing near the carpal joint. The feathers on the inside of the wing, covering the roots of the primaries, show these marks in a more ovate form, which also appears on the feathers of the abdomen.

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* Allowing half an inch to cover an accidental defect in the end of the tail-feathers; this is a full allowance.

Specimen B differs from A in the rufous colour of the back being paler and duller, apparently from the action upon the feathers of the sun and weather, also in the sagittate marks on the rump being more sparsely distributed, in all the light transverse bars of the tail being grey, in the cheeks being of the same colour as the upper part of the head, in the ground-colour of the breast, abdomen, flanks, and outer sides of the thighs being of a dark rufous, and in the darker ovate spots being spread over the thighs and under tail-coverts.

The accompanying Plate, by Mr. Wolf, in which the upper figure represents specimen B, and the two lower figures specimen A in two attitudes, all reduced to one-third of their natural dimensions, will probably give a clearer idea than any more detailed description of the Madagascar Kestrel. They may be compared with the figure of *T. gracilis* in DesMurs's 'Iconographie Ornithologique,' pl. 25, and with that of *T. punctatus* in Temminck's 'Planches Coloriées,' pl. 45.

Should the readers of 'The Ibis' agree with me in considering the Kestrel of Madagascar a distinct species, I am sure they will also agree in the propriety of distinguishing it by the name of the naturalist by whom the specimens now described were collected, and of adopting for it the specific designation of *T. newtoni.*

In conclusion, I beg leave to add a list of the species of Kestrels which I have had the opportunity of personally examining (and all of which appear to me to be specifically distinct), arranged in what appears to me to be their natural order:—

Tinnunculus sparverius (*Linn.*).
—— sparverioides (*Vigors*).
—— gracilis (*Lesson*).
—— newtoni, *nobis.*
—— punctatus (*Temm.*).
—— rupicoloides (*Smith*).

Tinnunculus rupicola (*Daud.*).
—— moluccensis (*Schlegel*).
—— alaudarius (*Gmel.*).
—— cenchroides (*Vigors*).
—— cenchris (*Frisch*).

V.—*Notice of the Occurrence of the Tawny Pipit* (Anthus rufescens) *in Great Britain.* By GEORGE DAWSON ROWLEY.

THE fact that the Tawny Pipit is common in France would lead us to suppose that it might be found, more or less frequently, on our south coasts. I think I have established, in two instances, that it already has been taken near Brighton, and have little doubt that more examples would have been known had the attention of ornithologists been directed towards the species. Late on the evening of Sept. 24th last, a person named Wing brought a Pipit, in the flesh, to Mr. George Swaysland, naturalist, 4 Queen's Road, Brighton, with directions to stuff it for him. Swaysland saw at once that it was a curious bird, and, after some conversation, induced Wing to part with it, calling to his attention that he did not collect, and it could not be a particular object of interest to any one but an ornithologist.

Having succeeded, Swaysland took down the particulars, and sent for me. I read Wing's address and the paper, which stated that he had shot the bird on the cliff, about a mile and a half from Rottingdean, near Brighton. It was pointed out to him by a coast-guard or fisherman; and the bird flew just over the cliff at first, then alighted on the edge, and was killed. I examined the shot-marks, and next compared it with Yarrell and Morris, at first thinking it was *Anthus ricardi*; but the hind claw proving much too short, I began to suspect we had a new species before us. Taking time to reflect, I mentioned it to Mr. Alfred Newton, who observed, "Can it be *Anthus rufescens*, a bird I always expected to turn up in England?" Ultimately I sent it up to Mr. Gould, whose answer I give in his own words: —"The bird is *Anthus rufescens*; apparently a fine old male in summer plumage. It is unusual for it to have spotted markings on the chest; but I have no doubt I am right as to its name. Others ought to be found on the south coast, as the bird is common in the central parts of France and Spain."

I had previously thought, and Swaysland with me, that it was a young bird of the year, and still incline to that view, though hesitating to differ from so great an authority. We did so partly on account of the fine hair-like feathers about the vent, and the spangles or light edges to the feathers on the back, which all our Larks and Pipits have in their first plumage. It now came to our remembrance that another specimen, which had been sold to Henry Collins, Esq., of Aldsworth, near Emsworth, for an *Anthus ricardi*, was exactly the same as the one under examination. Upon this I wrote to Mr. Collins, a gentleman whose collection is rich in British-killed birds; and he, in the most liberal manner, directly placed it at my disposal. I knew that there could not be the smallest doubt that this latter was a *bonâ fide* British bird, as it had been shot by Harding, a domestic servant in Brighton and a highly respectable man, with whom I am well acquainted, and can quite depend upon. I was therefore much pleased to find it exactly correspond with the other (particularly in the short hind claw, which is long in *A. ricardi*), and to observe that Mr. Collins's example is even finer than Swaysland's. I ascertained the particulars of its capture from Harding myself. It was shot by him, August 17, 1858, about 7 o'clock in the morning, close to a shallow pool (a good locality, which I hold in great respect), near Shoreham Harbour, where I have, as the wished-for daylight began to appear, come upon a Grey Plover (*Vanellus melanogaster*), heard "his signal-whistle," and traced his tracks upon the mud. I asked Harding what called his attention to this bird more than others, since he said there were several Rock Pipits about at the time, and the Meadow Pipit (*Anthus pratensis*) is abundant. He said the note struck him as different to the Titlarks. "It came piping down from above," and allowed him to approach with great facility. Mr. Collins's Pipit, though rather hard hit, is evidently older than Swaysland's, and is also, I believe, a male. It seems probable, when we consider the time it was killed, that it had bred somewhere in this country, perhaps not far off, and was then thinking of departure. The Rottingdean bird likewise had migration in view, doubtless. I have preserved the sternum of the latter. Mr. Tristram, in his catalogue of 1858, says of this bird, "it is *the* Pipit of the Sahara Desert, and its eggs vary as widely as those of the Tree Pipit in England;" and Mr. Wheelwright states the Tawny Pipit (*A. campestris*, Briss.) to occur in Sweden, "where it is confined to the sandy shores of the south." Notwithstanding its wide range, it is strange that no examples have previously been recorded here. A genuine British-taken nest of eggs of *Anthus rufescens* may not be impossible, therefore, to a pains-taking Sussex collector or others; and that such a piece of good fortune may befall some of his 'Ibis' friends is the sincere desire and wish of the individual who has ventured to trouble them with this communication.

VI.—*On the Birds of the Interior of British North America.*

By Captain Blakiston.

When I first thought of a communication on this subject, my intention was simply to supply additional notes concerning specimens collected during my wanderings in the Indian country, between Hudson's Bay and the Rocky Mountains, in 1857, 1858, and 1859, which I was prevented from attaching to the list published in 'The Ibis' (Nos. 12 and 13) by the shortness of my stay in England previous to leaving for China. On going through my note-books, however, I found many observations on birds that I had not been fortunate enough to preserve specimens of, which I considered ought not to be lost; and having, when identifying my collection, rummaged up most that was previously known respecting the ornithology of the northern part of the American continent, which I found much scattered, I determined upon making this as complete a list as possible of the birds inhabiting the interior portion of the vast tract stretching from ocean to ocean, known as British North America.

As the title which heads this paper may seem to some persons rather ambiguous, I will first observe, that by the "interior" of British North America I mean the wild uncultivated region which, tenanted by few besides the aboriginal Indian tribes, lies to the north and west of Lake Superior, and may be said to be bounded by the Rocky Mountains, the 49th parallel of north latitude (which is the international boundary), Canada, Hudson's Bay, and the Arctic Sea; and, secondly, that the birds included are such as have been identified as inhabitants of that area by specimens reliably authenticated. With respect to the species enumerated, I should state that I have added to my own those mentioned in the 'Fauna Boreali-Americana' of Richardson and Swainson, and in the narratives of Arctic expeditions made since that time. Next to this, I have included the birds given by Mr. Andrew Murray in a paper entitled "Contributions to the Natural History of the Hudson's Bay Company's Territories," published in the 'Edinb. New Phil. Journ.' for April 1859, which seems to have been drawn up with care and caution; and also such birds as have been received by the Smithsonian Institution at Washington from the same country. I had, however, nearly completed the list when I discovered a most valuable addition to the ornithology of the north-west in an account, based on a large collection, of the "Mammals, Birds, &c., of the Mackenzie River District," by Mr. Bernard H. Ross, of the Hudson's Bay Company's Service, published in the 'Natural History Review' for July 1862. I need scarcely say that this unexpected source of information has been carefully attended to; and it affords me, as it must most American ornithologists, the greatest satisfaction that so much has been done in that out-of-the-way part of the world. The principal thing that I feel in want of is a knowledge of the doings of Mr. R. Kennicott, an American collector, who, having spent two winters in the north, has made extensive collections. However, I hope that this may be added by Professor Baird in a future number of 'The Ibis,' and I feel sure he will gladly do this for the sake of the readers of this Magazine.

With respect to the nomenclature and arrangement, I have, for the sake of uniformity, and in order to save the space requisite for synonyms and reference to authorities, adopted that of Professor S. F. Baird in his admirable 'Report on the Birds of North America,' because that publication, being the result of much labour, must hereafter be looked on as a standard synopsis for reference on American ornithology; and I will here mention that I am indebted to its author for material assistance in the identification of my collection, he having supplied me with specimens from the Smithsonian Institution of those species that were likely to be confounded together.

Recurring to the geographical area to which the following notes refer, a glance at a map is sufficient to show that, being quite the heart of the northern part of the continent, its fauna may be considered strictly American; for, being well removed from both the eastern and western sea-boards, it ought not to include stragglers from either Europe or Asia. Some Pacific forms, however, occur, as might be expected, in the north-western corner, namely, on the Mackenzie River and its tributaries; for the configuration of the west coast north of the Columbia is such, that birds taking a direct north flight would naturally strike the upper waters of the Yukon River, flowing through the Russian territory, between which and the Mackenzie the lowness of the northward extension of the Rocky Mountain range is hardly a barrier; and consequently we find not only stragglers, but regular visitants from the Pacific frequenting the north part of the valley of the Mackenzie and adjacent Arctic shore. Such birds, therefore, are here included, at least so many as are known to us; and I have sometimes mentioned the occurrence on the Yukon of certain species (although that is beyond my bounds), in order to draw attention to them. For like reason also, I have noticed birds which have been found by American expeditions on the Upper Missouri; but, like the last, they have only been referred to incidentally, and do not figure in the list in CAPITALS, such being applied only to those ascertained to inhabit some portion of the "interior" as defined above; and no species which have been found only in Labrador and the north-east Arctic lands, British Columbia, or any part of Canada have been admitted; but I have drawn up this paper with the sole intention of supplying a local list, brought up to the present time, of the birds of the interior of British North America, and, as such, I shall feel honoured by its appreciation.

Order I. ACCIPITRES.

Cathartes aura.

In the 'Fauna Boreali-Americana' a specimen of this Vulture is recorded from the Saskatchawan*. An individual was shot at Red River Settlement on the 27th of April, 1859, which I examined, and I was very sorry that my departure the following day, on a journey to the United States, prevented my preserving it. What adds to the interest of this second capture is, that at that date, it being a late spring, the winter's snow was covering the ground to the depth of a foot, while the rivers were still ice-bound. Besides this, I observed a Vulture, which I took to be *C. aura*, at Fort Carlton, near the forks of the Saskatchawan River, in latitude 53°, on the 7th of May, the year previous; and again on the 2nd of September of the same year, I saw one feeding on the remains of a dead horse, abandoned by some Kootonay Indians, at the western base of the Rocky Mountains, a few miles south of where I had determined the international boundary (the 49th parallel) to exist. Again, I saw many Vultures in the northern part of the State of Minnesota in the early part of the May following; and there are several specimens in the collection of the Smithsonian Institution at Washington from near the 49th parallel. These latter instances, of course, were not on British ground, although very near it. They will not, therefore, swell the number of occurrences in the region treated of in this paper, where the Turkey Buzzard cannot be said to be common. The only part of it, indeed, as far as I can ascertain, that it inhabits is the prairie country that lies to the south and west of Lake Winipeg, which may be considered as the northern extension of the "high central plains" between the valley of the Mississippi and the Rocky Mountains.

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* Saskatch*a*wan is thus spelt, as being most in keeping with the Indian pronunciation of the "Strong Current."

1*. FALCO ANATUM.

Besides my specimen from near the head-waters of the south branch of the Saskatchawan River ('Ibis,' vol. iii. p. 315), I have received the American Peregrine from the west coast of Hudson's Bay; and Mr. Bernard Ross notices it, but says it is rare on the Mackenzie.

2. FALCO COLUMBARIUS.

With respect to this species, I would correct a typographical error which occurs in my former notes ('Ibis,' vol. iii. p. 316), where the colour of the "feet, cere, and space round the eye" of a female should be *light* yellow, in contradistinction to the *bright* yellow of the male, No. 117. This distinction was noticed in the case of each of the two pairs which I examined. The bird figured in the 'Fauna Boreali-Americana,' pl. 25, as *F. æsalon*, is doubtless the Pigeon-Hawk. In my former papers ('Ibis,' vol. iii. p. 316), I mentioned having obtained eggs of this species. Since then, I have seen Part 1 of Dr. Brewer's 'North American Oology,' where he has figured an egg supposed to belong to it, but in the letter-press mentions that Mr. Audubon's figure is very different. My specimens prove that Mr. Audubon was correct, and that Dr. Brewer has made an unlucky selection in taking a specimen when he was only told that a bird which was given to him at the same time was the parent, in preference to the personal observation of a naturalist of Mr. Audubon's merits. The nest which I found (the parent birds belonging to which I shot, and preserved the male) was situated in a small clump of willows and aspens on the prairie, not more than ten feet from the ground, and contained four eggs. The eggs and bird collected by M. Bourgeau corresponded with my own. I find that Mr. Bernard Ross obtained this bird as far north as the Arctic Circle, on Mackenzie River, and I am glad to see that he has also secured the egg.

FALCO CANDICANS, F. ISLANDICUS, et F. GRŒNLANDICUS.

The Gyr-Falcon is given in the 'Fauna Bor.-Am.,' as identified by a specimen from Hudson's Bay, as *F. islandicus* (Latham);

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* The numbers attached to species refer to my original list ('Ibis,' Nos. 12 and 13).

while Mr. Murray has recorded *F. candicans* (Gmelin) from the same locality. On the Saskatchawan this bird, or rather one of these birds, is rare, for I have only three or four recorded instances of having seen any individuals of the Falcon family during winter. It is known to the Indians and half-breeds of the interior as "the Hawk that winters." Some specimens which have lately come from Hudson's Bay differ considerably, the largest measuring 16½ inches in the wing. Mr. J. H. Gurney has decided that they are of two species, *F. islandicus* and *F. grœnlandicus*.

FALCO SPARVERIUS.

The American Sparrow-Hawk is identified as an inhabitant of the interior by specimens from the forks of the Saskatchawan recorded in the 'Fauna Boreali-Americana,' also one in the museum of the Smithsonian Institution from between Hudson's Bay and Lake Winipeg, and from the Mackenzie by Mr. Bernard Ross. I found it throughout the prairie country, where, in the spring, it comes in the van of the migratory birds, and whence it continues its journey as far as the Arctic Circle. I observed an individual at Red River Settlement on the 22nd of April, in 1859, the day previous to the arrival of the first Goose, while the whole country was yet covered with snow, and the decided spring thaw had not commenced. The year previous, I saw what I took for the Sparrow-Hawk on the 15th of March, at Fort Carlton, while Sir John Richardson observed it, the spring which he spent there, on the 13th.

3. ASTUR ATRICAPILLUS.

The Goshawk is found to range throughout the interior from Hudson's Bay to the Rocky Mountains and Mackenzie River. My specimens ('Ibis,' vol. iii. p. 316), collected as far west as the Saskatchawan, do not differ from others from the most eastern part of the continent, Nova Scotia.

4. ACCIPITER COOPERI. Killed at Fort Carlton. (See 'Ibis,' vol. iii. p. 317.)

As *Accipiter mexicanus* has been found on the Upper Missouri, I would draw attention to it as likely to be an inhabitant of the Saskatchawan Plains, between which and the prairie bordering the former river there is no natural line of demarcation.

5. Accipiter fuscus.

Besides inhabiting the Saskatchawan Plains ('Ibis,' vol. iii. p. 317), there are specimens of the Sharp-shinned Hawk in the Smithsonian Institution from Red River Settlement, and from between Hudson's Bay and Lake Winipeg, while Mr. Bernard Ross obtained it on the Mackenzie.

6. Buteo swainsonii.

This bird, of which I have recorded several examples from the Saskatchawan in my first paper ('Ibis,' vol. iii. p. 317), is figured in the 'Fauna Bor.-Am.' as *Buteo vulgaris*. Mr. Bernard Ross found it more rare to the northward, in the Mackenzie River district.

7. Buteo borealis.

Besides my record of the Red-tailed Buzzard ('Ibis,' vol. iii. p. 318), I find that it is mentioned in the 'Fauna Bor.-Am.' as having been shot also on Hudson's Bay.

Buteo bairdii, from the localities in which it has already been found, as well as *B. montanus* (the Western Red-tail) (which I find Mr. Ross has obtained, but I am not aware of the locality), may be looked for on the plains west of Lake Winipeg; but *B. lineatus* appears to be an eastern bird.

Buteo pennsylvanicus.

A specimen from the southern extremity of Hudson's Bay, on the authority of the 'Fauna Bor.-Am.,' brings the Broad-winged Hawk within the limits of this paper, but it appears properly to belong to the eastern side of the continent.

8. *Archibuteo lagopus*.

I here introduce this bird because it stands recorded as an inhabitant of the "interior of British North America," on the authority of a specimen killed by Mr. Drummond on the eastern slope of the Rocky Mountains, in latitude 55° ('Fauna Bor.-Am.' pl. 28), and is given by Mr. Ross as common on the Mackenzie. I have also seen specimens in the plumage of the figure above mentioned from Hudson's Bay, and frequently observed others in a wild state, though I never procured a specimen. Moreover, Professor Baird feels assured of its existence, and remarks that its identity with the European bird is most perfect in specimens from western North America. I have, however, only recorded it in *italics*, because Mr. John H. Gurney (whom no one in this country can equal as a referee on raptorial birds) considers that *A. lagopus* does not range to America; the patches of colouring on American birds being invariably larger, and the lightest individuals darker than the darkest European examples. He leans to the opinion that the American bird is the young of *A. sancti-johannis*, next to be noted.

9. Archibuteo sancti-johannis.

In my first paper a specimen and eggs are mentioned from the western plains ('Ibis,' vol. iii. p. 318), where the Black Hawk is not an uncommon bird. I find also that Mr. Andrew Murray, in his paper entitled "Contributions to the Natural History of the Hudson's Bay Company's Territories," in the 'Edin. New Phil. Journ.' for April 1859, has also recorded specimens from Hudson's Bay and the country lying between its western shore and Lake Winipeg. Mr. Ross gives it on the Mackenzie as rare, which is the most western locality assigned to the species. The supposed *A. lagopus* has, however, been obtained in California and Washington Territory, but those localities, although on the Pacific side of the Rocky Mountain range, are not further west in longitude than Mackenzie River; still it is curious that Professor Baird has received no specimens of *A. sancti-johannis*, if it is the adult of the other, from the Pacific States.

10. Archibuteo ferrugineus. (See 'Ibis,' vol. iii. p. 318.)

Although my observations on the American *Falconidæ* have been but few, I am obliged a second time to call in question the veracity of the 1st Part of Dr. Brewer's 'Oology.' I refer to the case of the "California Squirrel-Hawk," or "Western Rough-legged Buzzard," the supposed egg of which he has figured from a specimen said to have been obtained by Dr. Heermann in California. There has evidently been some mistake about it; for, as stated in my first paper ('Ibis,' No. 12), I took two nests of this bird on the Saskatchawan prairies, from one of which I shot a female bird, now in the collection of the Royal Artillery

Institution at Woolwich; so that there can be no doubt of the identity of my eggs. Now Dr. Brewer figures this Buzzard's egg (N. A. O. pl. 3. fig. 26) as being "of a yellowish white," "marked with large blotches of a light, but very distinct, purplish grey," and measuring "$2\frac{3}{32}$ by $1\frac{11}{16}$ inches,"—whereas my eggs present very much more the appearance of the eggs of the Common Buzzard, and exhibit similar variations. One of them is white, with large distinct blotches and smaller specks of two shades of brown; another is more obscurely blotched with paler brown, and at the same time freckled nearly all over. They measure—

Spec. *a.* 2·6 by 2·0 inches,
Spec. *b.* 2·5 by 1·95 inches,

being thus considerably larger than is represented by Dr. Brewer, besides being quite differently coloured. Mr. Bernard Ross seems doubtful about this bird on the Mackenzie.

11. Circus hudsonius. (See 'Ibis,' vol. iii. p. 319.)
Also common on the Mackenzie (Bernard Ross).

12. Aquila canadensis. (See 'Ibis,' vol. iii. p. 319.)
Also Mackenzie River, to the Arctic Coast (Bernard Ross).

13. Haliaëtus leucocephalus. (See 'Ibis,' vol. iii. p. 319.)
Also Mackenzie River, to the Arctic Coast (Bernard Ross).

14. Pandion carolinensis. (See 'Ibis,' vol. iii. p. 320.)
Also Mackenzie River, to the Arctic Coast (Bernard Ross).

15. Bubo virginianus. 16. *Bubo arcticus.*

In my first paper ('Ibis,' vol. iii. p. 320) the light-coloured variety of the Great Horned Owl was placed as a distinct species from *B. virginianus.* I am, however, very doubtful of the correctness of this view, and consequently would prefer keeping it under the original name; otherwise we shall have to allow at least three species, all differing from the type. Professor Baird, of the Smithsonian Institution, whose complete ornithology of North America has been published as a volume of the 'Pacific Railroad Reports' by order of the United States Government, has had perhaps greater facilities for examining into this subject than any one else; he thus sums up (p. 50):—"We have, therefore, to regard them all as *B. virginianus,* and to attribute the differences in their colours to variety only, either local or caused by accidental circumstances. With but a single well-characterized specimen of each of the four varieties, the inducement would be strong to regard them as distinct species, so different are their colours; but with an extended series (thirty specimens) like the present, all the characters exist in such various degrees of modification, and are so blended, that it is to us quite impossible." The two specimens obtained by myself, which differed very considerably in colour, were taken at Fort Carlton, on the north branch, near the forks of the Saskatchawan River, at which lone habitation I spent my first winter (1857–58) in the Indian country. The dark-coloured one was trapped during mid-winter by one of the half-breed Hudson's Bay Company's men, in a snare set in the woods for rabbits, or, as I should properly call them, hares (*Lepus americanus*). The second was not so easily caught. It was near the end of March, on a stormy day, that I trudged along the side of a narrow wooded ravine, which, opening from the river valley near the fort, runs some distance back into the plain, the general level of which is about 200 feet above the river. I was on my usual ornithological walk, which it was my custom to take daily, in the afternoon, after my share of the labours of magnetical observations was over. As I proceeded, I started a large light-coloured Owl, but having the buffalo-leather cover on my fowling-piece, as is the usual custom of the Indian country, I was not ready for him when he rose. He alighted near the head of the ravine, and I followed; but, before getting within shot, he started again. From this point a continuous line of clumps of aspens and willows, with clear spaces between them, stretch out on the prairie. Many a long chase have Owls led me at different times, but I think this was one of the longest. As I advanced, Mr. Arcticus (if we may so call him) continually shifted his position further and further along the line of clumps, so that I found it impossible to get within two or three gun-shots of him. At one moment I lost the run of him altogether, and was nearly abandoning the chase, when I again espied my friend; but again he changed his position, and dived somewhere into the middle of large-sized coppice. I now bethought me of, and at once adopted, a *ruse de guerre,* and by making a considerable circuit I entered the clump on the far side. It happened to be only thick in places, and the deciduous trees being at that season, of course, devoid of leaves, I walked tolerably easily, keeping a good look-out. I had a pointer-dog with me, which I allowed to beat the ground, thinking perhaps he might attract the attention of the Owl from me; and I was already so angry with the length of the chase that I determined to blaze even if he rose a hundred yards from me. But to the point at once: as I steadily made my way through the little wood, up started friend "Arcticus," as unexpectedly as a snipe, among the tops of the small aspens. My gun rose to my shoulder as quickly as if I had been on a bog in the "auld country," and down dropped the quarry to a touch of No. 3 shot at thirty-two yards. I need hardly say how delighted I was as I trudged homeward to the fort, with a fine but very light-coloured specimen of the Great Horned Owl tied by my pocket-handkerchief to the barrel of the gun over my shoulder. On a post-mortem examination made at the inquest, the doctors agreed (for once) as to the cause of death: but a jury of very eminent men divided as to the identity of the deceased; for friends on two sides appeared, the one party claiming him as a true *Bubo virginianus,* while others contend (for the contest is not yet ended) that his Christian name should be "Arcticus." The case has been referred to the Chancery Court, whence it is hoped that the ward will some day be extricated. The final decision will be of importance to the progress of ornithology, as it will define the limit to which we may go in varieties—local, accidental, or, if we may so term them, permanent. In the meantime I shall assume that the Great Horned Owls of North America are all *B. virginianus.* "Am I right—or any other man?" The Great Horned Owl appears to be a common inhabitant of the interior of North America, from Hudson's Bay to the Rocky Mountains, and north to the Arctic Circle—in fact, the whole of North America.

OTUS WILSONIANUS.

The Long-eared Owl, an inhabitant of the whole of temperate North America, is given in the 'Fauna Bor.-Am.' up to 60° N. latitude, while a specimen has been supplied to the Smithsonian

Institution, from Red River Settlement, by Mr. Donald Gunn, an influential settler in that isolated colony; and Mr. Bernard Ross has found it on the Mackenzie.

BRACHYOTUS CASSINII.

The 'Fauna Bor.-Am.' also gives the Short-eared Owl in the fur-countries, up to 67° north. Mr. Murray notes a specimen from the woody district between Hudson's Bay and Lake Winipeg; I have seen it from the coast of Hudson's Bay, and Mr. Bernard Ross gives it from Mackenzie River.

SYRNIUM CINEREUM.

The Great Grey Owl, a northern species, is identified as belonging to the interior of British North America by a specimen in the collection of the Smithsonian Institution, from Red River Settlement; one mentioned in the 'Fauna Bor.-Am.,' from Great Bear Lake; and two which I received from the Rev. J. P. Gardiner, a missionary resident at York Factory, Hudson's Bay.

SYRNIUM NEBULOSUM.

The Barred Owl, an Eastern American bird, was described by Forster from a specimen from Hudson's Bay; it is recorded also as having been lately found in California.

NYCTALE RICHARDSONI.

This species, the Sparrow-Owl, was figured and described under the name of *Strix tengmalmi* in the 'Fauna Bor.-Am.,' from the forks of the Saskatchawan. It has been found breeding on the Mackenzie by Mr. Ross.

N. albifrons, from the localities in which it has been taken, will possibly be found in the region treated of in this paper; as well as *Athene hypogæa*, of which a specimen has been obtained at Fort Benton, on the Upper Missouri. I have inserted these names only to draw the attention of naturalists who may at a future time more fully explore the little-known (in an ornithological sense) British Indian territory lying to the west of Canada.

17. NYCTEA NIVEA.

The Common Snowy Owl ('Ibis,' vol. iii. p. 320) is known to the fur-traders and voyageurs of the North by its partiality for

Willow-grouse and American hares—the "white partridges" and "rabbits" of their parlance; and its audacity is such, that it was related to me by a chief factor of the Hudson's Bay Company's service, that he knew of an instance of one carrying off a wounded bird from the haversack of a hunter; its wing, having been sticking out and fluttering, attracted the Owl's attention. I observed the Snowy Owl in the neighbourhood of the forks of the Saskatchawan as early as the 3rd of November. Mr. Ross has found it breeding on the Mackenzie.

18. Surnia ulula.

The Hawk-Owl ('Ibis,' vol. iii. p. 320) is the most common Owl of the interior, up to the Arctic Coast; it is resident all the winter through on the Saskatchawan, and extends thence to Hudson's Bay. It is the same bird that inhabits Northern Europe; but I have not heard that it has yet been met with by any ornithologist to the west of the Rocky Mountains.

Order II. SCANSORES.

I cannot find that any Cuckoo has been observed in the western Indian country north of 49°; but two species are known to inhabit the Missouri Plains.

19. Picus villosus.

The Hairy Woodpecker, or its varieties, extends as far as 63° N. lat. My two specimens ('Ibis,' vol. iv. p. 3) are of the larger variety, and were obtained during winter. I have seen as many as six holes, one above another, in an old burnt tree, the nesting-places of this bird.

20. Picus pubescens.

This and the preceding species are frequently to be met with in company, as in the eastern part of the continent; and while the larger bird searches a good-sized poplar-tree in quest of its insect prey, the smaller is as actively engaged within a few feet on a dead or dying alder-bush. Besides my specimens ('Ibis,' vol. iv. p. 3), both these birds are noted by Mr. Bernard Ross on the Mackenzie.

Picoides arcticus.

The Black-backed Three-toed Woodpecker, besides being given in the 'Fauna Bor.-Am.' as an inhabitant of the Rocky Mountains, is identified from the neighbourhood of Red River Settlement by specimens procured by Mr. Donald Gunn, now in the collection of the Smithsonian Institution, and by Mr. Bernard Ross on the Mackenzie. I observed what I took for this species on several occasions, and, in fact, shot a specimen on the western slope of the Rocky Mountains, but at the time I had no opportunity of preserving it.

PICOIDES HIRSUTUS.

The Banded Three-toed Woodpecker is here inserted on the authority of the 'Fauna Bor.-Am.' and Mr. Bernard Ross as an inhabitant of the central and northern regions, and on that of Mr. Murray of the shores of Hudson's Bay.

Mr. Bernard Ross considers that he has obtained a specimen of *Picoides dorsalis* on the Mackenzie, where it winters.

21. SPHYROPICUS VARIUS.

Besides having been found on the Saskatchawan, whence my specimen ('Ibis,' vol. iv. p. 3) was obtained, both Sir John Richardson and Mr. Bernard Ross record the Yellow-bellied Woodpecker on the Mackenzie.

22. HYLOTOMUS PILEATUS.

This fine bird is highly esteemed among the Indians of the Hudson's Bay Company's territory as medicine. It must not, however, be considered that "medicine" means physic; it should more properly be understood as "charm." So greatly do these people value the bird in this way, that they skin it and stuff it, hanging it to the poles of the wigwam when any inmate is labouring under indisposition; and they cannot be induced to part with it under any circumstances. Before I succeeded in obtaining a specimen myself ('Ibis,' vol. iv. p. 3), a Cree Indian, who was camping near Fort Carlton for a few days in January 1858, brought one stuffed in the manner above noticed to show me, because he had heard that I was "curious about birds." It had been shot at a place called Sturgeon Lake, about sixty miles to the north of the fort—the last fall, and had been presented to him as medicine for his wife, who had stuffed it with moss; and, to do the old squaw credit, I must say that the head was remarkably well done, retaining in perfection all the features of life. He would not give it me, as it was a great charm, being hung up in the lodge always when "medicine was being made" (which medicine-making consists in a great amount of singing, drumming, and certain mysterious operations) for the benefit of his wife, who had been injured many years before when dressing a buffalo-robe, and had never entirely recovered from the accident. The Indian's name was "Ousa-wanaskie" (the Yellow Otter). He was very chary of the specimen, and it was only with great difficulty that I could induce him to lend it me while I made a coloured drawing of its head, as I was then doubtful whether I should meet with another. When done, however, he was much delighted with the drawing, and took it to show to his wife and family, whom it was very amusing to watch as they compared the original and the representation. This they deemed highly satisfactory, and it served me very well in lieu of a preserved skin. The Pileated Woodpecker has not been obtained from the neighbourhood of Hudson's Bay, and on the Mackenzie is noted as rare. It is known to the inland Cree Indians as "Ma-maou."

23. MELANERPES TORQUATUS.

Lewis's Woodpecker, being a western bird, had not been found in British territory before my specimen noted in a former paper in 'The Ibis' (vol. iv. p. 3). The locality was on Bow River, at the eastern base of the Rocky Mountains; but I am unable to add any particulars concerning the species, having only obtained that one specimen. *Melanerpes erythrocephalus* of the 'Fauna Bor.-Am.' has been found on the Upper Missouri, but I did not meet with it.

24. COLAPTES AURATUS.

Besides the specimen noted in my original paper ('Ibis,' vol. iv. p. 3), from Hudson's Bay, others have been presented to the Smithsonian Institution, from Red River Settlement, and Nelson River between Hudson's Bay and Lake Winipeg, while it is given by Mr. Bernard Ross as common as far north on the Mackenzie as the Arctic Circle. The Yellow-winged Woodpecker is among the earliest arrivals from the south, whence it comes in large bands; and nothing astonished me more than the immense number of these birds which were migrating northwards, favoured by a southerly breeze, at Red River Settlement, on the 26th of April, 1859. This was also the date that the first was seen at Fort Carlton on the Saskatchawan the previous year. By cutting down a hollow tree near Fort Carlton, I obtained the eggs; they were nine in number, perfectly white of course, and laid in finely chopped dry decayed wood.

25. *Colaptes mexicanus.*
Colaptes hybridus.

Being at the time ignorant of the existence of more than one species of this genus, I did not take any particular trouble to collect specimens in the interior of the continent, and consequently I am now in doubt of what species were numbers of "Flickers" which I observed in large congregations on either slope of the Rocky Mountains in the autumn of 1858. M. Bourgeau, the indefatigable botanical collector of Captain Palliser's Exploring Expedition, obtained one specimen on the Saskatchawan Plains; but whether it was *C. mexicanus* of Swainson, or the hybrid bird which is so plentiful on the upper waters of the Missouri, I was not able to determine, as I had not an opportunity of examining the specimen after my return to England.

Order III. INSESSORES.

Trochilus, sp.

There seems to be some doubt as to which of three species, *colubris*, *rufus*, or *platycercus*, inhabits the northern interior of the American continent. On the authority of the 'Fauna Bor.-Am.,' Humming-birds are found to range up to 57° N. lat. They are known about the gardens of the inhabitants of Red River Settlement, while I observed certain birds of this family both at the eastern base of the Rocky Mountains and in the valley of the head waters of the Flathead River, which lies between the eastern and western ranges of the chain, where I crossed it a few miles north of American territory. All I can say about them is that the general colour was brown, with a light throat.

Antrostomus vociferus.

Although it may seem presumptuous to include in a local fauna a bird which has not been seen, yet the note of the Whip-poor-will is so distinct and unmistakeable that I think we may reasonably include it among the birds of the interior of the British possessions in North America, from the fact of its voice being known at the Red River Settlement, in lat. 50° N., where I have frequently heard it spoken of. Mr. Donald Gunn of that place, who has contributed considerably to our knowledge of the natural history and climate of the Hudson's Bay Territories, informed me that he heard the voice of the Whip-poor-will on the 2nd of May, 1856; I was also told that a chance one or two had been heard on the Saskatchawan. Moreover, I myself heard this bird when camped, on the night of the 4th of May, 1859, on the banks of Red Lake River, in the northern part of the State of Minnesota. Its early arrival in that latitude would indicate it as a northern bird; but Dr. Richardson does not mention having noticed it west of Lake Huron; while I never heard its peculiar note during my eighteen months' travelling to the north of the United States. *A. nuttalli* may perhaps take its place in the west.

26. CHORDEILES HENRYI.

Whether this is the species (for the distinctions are but slight) which is given by Dr. Richardson as a visitor to the most remote Arctic lands, only the re-examination of his specimens can prove. M. Bourgeau's and my own, from the Saskatchawan, have been made out to be the Western Night-Hawk, as yet not found in the eastern part of the continent. Specimen No. 132 ('Ibis,' vol. iv. p. 3), a male, measured 9½ inches in length, and 7⅝ in the wing. The feet were of a dark purple-flesh, marked with white; the bill dark brown; and the iris of the eye, which was small, also brown. Its stomach contained the remains of insects. M. Bourgeau's specimen, obtained on the prairie between the north and south branches of the Saskatchawan, on the 27th of June, measured in the wing 8⅝ in. Three eggs, which he obtained at the same time, were of a light olive, blotched with black more thickly at one end than the other. No nest was constructed;

but the eggs lay where an old patch of buffalo-dung (which is deposited similar to cow-dung in the fields of England) had been turned over, and the ground for that space (say a circle of 15 to 18 inches diameter) was consequently bare of grass. Dr. T. M. Brewer, in the 1st Part of his 'North American Oology,' notices the great diversity of colouring in the eggs of the allied species *C. virginianus* or *popetue*; and therefore I am not astonished at the difference of M. Bourgeau's specimens from those figured in Dr. Brewer's plate. He, however, states that the number of eggs is limited to two; and therefore I wonder how it is that another species so closely allied has been found with three. Let us charitably hope that the Common Night-Hawk is sometimes blessed with more than twins; or, if not, we may advise her to try a trip to the high western plains, where the invigorating air of the trackless prairies may benefit her constitution. I am sorry that the whereabouts of M. Bourgeau's collection is uncertain, or I might have brought the eggs of *C. henryi* forward as a novelty. With regard to the habits of the Western Night-Hawk, I may observe that the first time I noticed it at Fort Carlton, near the forks of the Saskatchawan, was on the 2nd of June, when I shot one. On the same day I saw large congregations about the river valley, in one of which there must have been from 80 to 100 individuals; and as, previous to this, I was out every day with my gun in search of birds, and did not notice any, I concluded they were on their spring migration. Dr. Richardson, however, mentions the Night-Hawk (*C. virginianus*?) at Great Bear Lake, some 800 miles further north, on the last day of May. It was numerous at Fort Pitt, on the Saskatchawan River, at the end of June; and I found it on the eastern base of the Rocky Mountains in August. As another proof to add to those already known as to the misnaming of this bird *Night*-Hawk, I may mention that at a small inland lake on the buffalo plains I once saw half a dozen of them hawking about in company with a number of Terns (*Hydrochelidon plumbea*) in bright sunlight. I see that Mr. A. Murray has called a specimen from near Hudson's Bay *C. virginianus*; and Mr. Bernard Ross says that *C. popetue* ranges as far north on the Mackenzie as the Arctic Circle. Both species *may* inhabit the interior, but I should be inclined to think that western specimens were *C. henryi*.

27. CERYLE ALCYON.

Besides the specimen from the Rocky Mountains already noted ('Ibis,' vol. iv. p. 3), I obtained a second from my friend Mr. J. C. Clare, at York Factory, on Hudson's Bay; there are others also, in the Smithsonian Institution, from between that place and Lake Winipeg, and also from Red River Settlement. Dr. Richardson and Mr. Bernard Ross have noted the Belted Kingfisher up to 67° N. lat., while I have observed the bird the whole distance across the interior, from Hudson's Bay to the western base of the Rocky Mountains. It remained, in 1857, on the lower part of the Saskatchawan River till the 7th of October; and I observed it in 1859 at Pembina, where the 49th parallel crosses the Red River of the north, on the 1st of May. The river then had not opened, although there was considerable water on the surface of the ice, and we crossed over with horses and carts. This is not much in favour of the climate of the interior, but it must not be thought that the season is always as late as in this instance.

28. TYRANNUS CAROLINENSIS.

Besides a specimen recorded from Fort Carlton in the 'Fauna Bor.-Am.,' and my own from the same locality ('Ibis,' vol. iv. p. 3), Mr. Bernard Ross notices the King Bird on Mackenzie River.

29. SAYORNIS SAYUS.

Two specimens of Say's Flycatcher are recorded in the 'Fauna Bor.-Am.' from Fort Carlton, where mine ('Ibis,' vol. iv. p. 4) was procured. Mr. Bernard Ross gives it as rare on the Mackenzie. *S. fuscus* is also given by Mr. Ross; but I should think such a western range doubtful.

CONTOPUS BOREALIS.

The Olive-sided Flycatcher, described by Swainson in the 'Fauna Bor.-Am.,' from a specimen killed on the Lower Saskatchawan, has been since obtained on Hudson's Bay, as recorded by Mr. Murray, and on the Mackenzie by Mr. Ross.

CONTOPUS RICHARDSONII.

The occurrence of this species in the interior rests on a specimen described in the 'Fauna Bor.-Am.,' from the same locality as the last.

CONTOPUS VIRENS.

The Wood-Pewee is given by Richardson in the Appendix to Back's 'Voyage.' There is also a specimen from Northern Minnesota in the collection of the Smithsonian Institution.

30. EMPIDONAX PUSILLUS.

Besides my specimen killed at Fort Carlton, on the Saskatchawan ('Ibis,' vol. iv. p. 4), the 'Fauna Bor.-Am.' records one from the same place, and Mr. Bernard Ross notices it on the Mackenzie.

EMPIDONAX TRAILLII.

EMPIDONAX MINIMUS.

Both these Flycatchers are given by Mr. Bernard Ross as summer visitors to the Mackenzie River, the latter the more common.

Of the Thrushes, *Turdus pallasii* (the Hermit Thrush) stands first in order; but its occurrence in the interior is at present uncertain, as Mr. Ross is doubtful concerning a specimen collected by him on Mackenzie River. In the 'Fauna Bor.-Am.' there has been a jumble about the Thrushes: Professor Baird considers the description of *Merula wilsonii*, and the figures of *M. solitaria* (pl. 35) and *M. minor* (pl. 36), of that work, to belong to *Turdus swainsonii* (Cab.); while the description only of *M. solitaria*, given as from Lake Huron, refers to *T. pallasii*, the true Hermit Thrush.

TURDUS FUSCESCENS.

A specimen from the Lower Saskatchawan, mentioned in the 'Fauna Bor.-Am.' as *Merula minor*, and another from Red River Settlement, in the Smithsonian Institution, place Wilson's Thrush as an inhabitant of the region treated of in this paper; but, for my own part, I did not obtain a specimen.

31. TURDUS SWAINSONII.

On account of the confusion which existed between the three species, *T. fuscescens*, *T. ustulatus*, and the present one, my specimen ('Ibis,' vol. iv. p.4) was carefully compared with a typical one given me by Professor Baird. I shot another at the same time at Fort Carlton, which, being a male (the sex of No. 99 could not be distinguished on account of the penetration of the shot), corresponded in colour and markings; they measured respectively in length 6½ and 6⅞ inches, and the wings 4 and 4¼ inches. The eyes were brown; feet brownish flesh; bills dark horn-colour, except the base of the lower mandible, which was flesh; the inside of their mouths yellow; and the second and third quill-feathers the longest. On the 5th of June, in the same locality, I obtained another Thrush, a female by dissection; the bill of the same colour as those mentioned above; feet dull flesh; length 7½ inches, wing 4 inches, tarsus 1⅛ inch. It was so much damaged that I did not preserve it, hoping to get another. The whole upper parts, including the tail, were of a uniform reddish olive; its identity must remain doubtful. *T. swainsonii* is given by Mr. Bernard Ross on Mackenzie River north to the Arctic Circle. *T. aliciæ* has also been found by Mr. Ross in the north on the Yukon River, to the west of the Rocky Mountains; it is, however, a bird of the Mississippi valley.

32. TURDUS MIGRATORIUS. (See 'Ibis,' vol. iv. p. 4.)

So widely as the American Robin is distributed on that continent, it is unnecessary for me to note the different localities where it has been found in the northern interior. Dr. Richardson, during his travels, observed that it hatches its young in latitude 54° at the end of May, and in 65° by June the 11th. Its first occurrence at Fort Franklin, in 65°, he notes on May 20th; at Fort Chepeweyan, 58¾°, May 7th; and Fort Carlton, April 22nd. In 1858, however, when I was at this last post, the Robin arrived from the south on the 16th of that month; but there can be no question that in those latitudes which are frozen up for nearly half the year, both the arrivals in spring and the departures in autumn are very much dependent on the progress of the seasons. For instance, in the following year the Robin did not reach Red River Settlement, three degrees further to the southward, before the fourth week in April. In 1858 I observed this bird on the north branch of the Saskatchawan River till the 28th of October. Mr. Ross notices its abundance on the Mackenzie, to the Arctic Circle.

TURDUS NÆVIUS.

A specimen is mentioned under the name of *Orpheus meruloides* in the 'Fauna Bor.-Am.,' from Fort Franklin, near the Arctic Circle; while all those enumerated in Professor Baird's Report are from the Pacific side of the Rocky Mountains. This is singular, but only helps to prove the mingling of the fauna, as well as the flora, of the Atlantic and Pacific slopes in the far north, which has been adverted to elsewhere.

SIALIA ARCTICA.

As I do not include any portion of Canada in the "interior," I cannot take notice of specimens of the Blue Bird (*S. sialis*) killed on Lake Huron, as recorded in the 'Fauna Bor.-Am.' The western species which heads this note, however, was obtained on Great Bear Lake by Dr. Richardson; while I observed what I took for this bird on both slopes of the Rocky Mountains, when I crossed by the Kootonay Pass, in August 1858.

REGULUS CALENDULA.

The Ruby-crowned Wren is mentioned by Mr. Bernard Ross as rare at Great Slave Lake, from whence the Mackenzie runs towards the Arctic Sea. I observed and shot specimens of a *Regulus*, which was not uncommon, on my boat-voyage in September between Hudson's Bay and Lake Winipeg; it associated with the Tits (*Parus atricapillus* et *P. hudsonicus*). I saw it as far as the Grand Rapid, near the embouchure of the Saskatchawan, at the north-west corner of that lake. I also observed a species on Bow River, at the eastern base of the Rocky Mountains. The 'Fauna Bor.-Am.' does not give any species.

HYDROBATA MEXICANA.

Specimens were obtained by Mr. Drummond, the botanist, at the head waters of the Athabasca River, and described by Swainson in the 'Fauna Bor.-Am.' as *Cinclus americanus*. It does not seem to be known on the eastern side of the continent. Mr. Lord, who has collected extensively in British Columbia, considers that all may be referred to one species.

33. ANTHUS LUDOVICIANUS.

My two specimens ('Ibis,' vol. iv. p. 4) seem to show that this is *A. aquaticus* of the 'Fauna Bor.-Am.' from the Saskatchawan. I did not find it nearly as plentiful as the following species.

Mr. Murray notes it from Hudson's Bay, and Mr. Bernard Ross from the Mackenzie.

34. Neocorys spraguii.

The Missouri Skylark, hitherto looked on as a rare bird, is common on the prairies of the Saskatchawan during the breeding-season. The first occasion on which I found it was in the neighbourhood of Fort Carlton, on May 6th. When disturbed from the prairie grass, which is its general haunt, it utters a single chirp, and immediately mounts in the air by a circuitous course, with a very undulating flight, to a great height, where it rests in a peculiar manner on its outstretched wings, and utters a very striking song, which it is difficult to describe, and I can liken to nothing I know. The sound is repeated in a quick succession of notes in the descending scale, each note being lower than the preceding. The bird then usually descends to the ground with great rapidity, almost like a stone, and something similar to a hawk swooping on its prey. These striking manners, if once seen, are not to be forgotten; and I should recognize the note instantly, even if I heard it in the depths of a mangrove-swamp in the tropics. I found it rather difficult of approach, and hard to shoot. How this bird should have been so long overlooked seems marvellous, for I do not know a more common bird on the buffalo plains of the Saskatchawan during summer, and it must consequently be a visitor to the southern prairies. I find also, by my note-books, that I observed it in Northern Minnesota on the 4th of May, 1859. My specimen from Fort Carlton was a male; it measured in length 6$\frac{3}{8}$ inches, the wing 3$\frac{1}{4}$ inches, and bill along the ridge scarcely half an inch; the eye was hazel; feet dull flesh-colour, tinged with yellowish underneath; bill above and at the point dusky, remainder of under mandible flesh. The first four quill-feathers were nearly equal and the longest, the fifth being $\frac{3}{8}$ths of an inch shorter; greater coverts tipped with dull white. It differs from *Anthus ludovicianus* principally in the bill, legs, chin, line over the eye, and tail-feathers.

Mniotilta varia (the Black-and-white Creeper) and *Oporornis varius* (the Connecticut Warbler) are given as doubtful by Mr. Bernard Ross on the Mackenzie.

HELMINTHOPHAGA RUFICAPILLA.

A specimen of the Nashville Warbler is noted in the 'Fauna Bor.-Am.' from the Lower Saskatchawan, and by Mr. Ross on Great Slave Lake.

35. HELMINTHOPHAGA CELATA.

The Orange-crowned Warbler was obtained by myself, for the first time, on the Saskatchawan ('Ibis,' vol. iv. p. 4); and Mr. Ross gives it, along with the foregoing, as rare on the Mackenzie.

36. HELMINTHOPHAGA PEREGRINA.

Two of my specimens ('Ibis,' vol. iv. p. 4) are referred to this species, which is likewise noted in the 'Fauna Bor.-Am.' from the Saskatchawan, and by Mr. Ross from Mackenzie River.

SEIURUS AUROCAPILLUS.

The 'Fauna Bor.-Am.' notices the Golden-crowned Thrush as breeding on the Lower Saskatchawan.

37. SEIURUS NOVEBORACENSIS.

Besides my specimen obtained at Fort Carlton ('Ibis,' vol. iv. p. 4), the Water-Thrush is noted in the 'Fauna Bor.-Am.' as passing that post in May. Mr. Andrew Murray gives it from the southern part of Hudson's Bay, and Mr. Ross as far north on the Mackenzie River as the Arctic Circle.

DENDRŒCA CORONATA.

The Yellow-rumped Warbler is given in the 'Fauna Bor.-Am.' as resident during the summer on the Lower Saskatchawan, and I observed this bird near Fort Carlton, above the forks; Mr. Ross also mentions it on the Mackenzie, nearly to its mouth.

38. DENDRŒCA STRIATA.

Besides a specimen of mine ('Ibis,' vol. iv. p. 4) killed at Fort Carlton, the 'Fauna Bor.-Am.' notices it on the Lower Saskatchawan; Mr. Murray gives it from Hudson's Bay, and Mr. Ross as a common bird on the Mackenzie.

DENDRŒCA BLACKBURNIÆ.

This species is given, on the authority of Mr. Murray, from Severn House, on Hudson's Bay, and Trout Lake, under the name of *D. parus*.

39. DENDRŒCA ÆSTIVA.

A specimen from Fort Carlton ('Ibis,' vol. iv. p. 4), and my having observed it from near Hudson's Bay, all the way to the eastern base of the Rocky Mountains, denote the Yellow Warbler as widely distributed throughout the interior; while Dr. Richardson and Mr. Ross have recorded its abundance to the Arctic Circle; and Mr. Murray gives it from localities on Hudson's Bay. Its showy plumage, attracting attention, has caused the Indians to give it a special name. The Crees of the Saskatchawan call it "Ousawoo-peeasees" (the Yellow Bird).

DENDRŒCA MACULOSA.

The Black-and-yellow Warbler rests on the authority of the 'Fauna Bor.-Am.' as a bird of the Saskatchawan; for I did not obtain a specimen, but only saw what I took for the bird, and hailed it as an old acquaintance of Nova Scotia. It has been found on the Mackenzie by Mr. Bernard Ross.

DENDRŒCA PALMARUM.

A single specimen, from the Lower Saskatchawan, is mentioned in the 'Fauna Bor.-Am.' under the name of *Sylvicola petechia*. Mr. R. Kennicott has supplied the Smithsonian Institution from Red River Settlement; and Mr. Ross notes it as rare at Great Slave Lake.

MYIODIOCTES PUSILLUS.

Rare on the Mackenzie (Mr. Bernard Ross).

MYIODIOCTES CANADENSIS.

A single specimen is recorded in the 'Fauna Bor.-Am.,' taken to be of this species, from the Lower Saskatchawan.

40. SETOPHAGA RUTICILLA.

Besides my specimen ('Ibis,' vol. iv. p. 4) from the Saskatchawan, this bird is noted in the 'Fauna Bor.-Am.,' and given by Mr. Bernard Ross as reaching the Arctic Circle, on the Mackenzie.

HIRUNDO HORREORUM.

The Barn Swallow, on the authority of the 'Fauna Bor.-Am.,' builds within the Arctic Circle in May, and leaves early in August. It is mentioned by Mr. Ross as rare at Great Slave Lake.

HIRUNDO LUNIFRONS.

The Cliff Swallow is also given in the 'Fauna Bor.-Am.' and by Mr. Ross on the Mackenzie; and I observed it in considerable numbers under the eaves of the buildings at Fort Pitt, on the north branch of the Saskatchawan, in June. While travelling over the prairie in the neighbourhood of Bow River, our party came upon an immense granite-boulder, about 25 feet high, standing alone on the plain. This had been taken advantage of by the Cliff Swallow, the mud-formed nests of which were clustered together in a mass. The steep cliffy banks of some parts of the Saskatchawan River are also used by this bird for nesting-places.

41. HIRUNDO BICOLOR.

My specimen ('Ibis,' vol. iv. p. 4) was, I believe, the first recorded from the interior, as it is only mentioned as having been observed in the 'Fauna Bor.-Am.' Since that, however, Mr. Ross has observed it on the Mackenzie, as far north as the Arctic Circle. In 1858 the White-bellied Swallow was first seen by myself at Fort Carlton, on the 23rd of April; but I was told of Swallows on the 21st. They were numerous early in May; and on the 17th I found a great number of them congregated about a small lake or pond entirely surrounded by old woods and willows, with its edge margined with long grass. After a time the whole congregation alighted on a couple of dead willow-bushes, about eight feet from the ground. Approaching within shot, I poured among the thickest lot my usual half-charge of small shot and powder, which brought a number to the ground. I picked up eight; but, on account of the length of the grass, I have no doubt I missed finding several. They alighted again in the same manner twice, before I quitted the place. I skinned one, and measured the whole; they ranged between $5\frac{1}{2}$ and $5\frac{7}{8}$ inches in length, and from $4\frac{1}{4}$ to 5 inches in the wing. I found these birds common on the Saskatchawan during the whole summer, and at the eastern base of the Rocky Mountains, near the international boundary, on the 7th of September.

42. COTYLE, sp.?

The specimen and eggs obtained by M. Bourgeau ('Ibis,' vol. iv.

p. 4) were taken by me to belong to *C. riparia*; but as I find there is another species (*C. serripennis*) which might be mistaken for it, I must leave the matter doubtful. Whichever of these two species it may be, it breeds in large numbers along the alluvial banks of the Saskatchawan River, where the holes may be seen frequently in horizontal lines, caused by the birds preferring to bore in the softest of the lines of strata in the cliffs. They select situations from 10 to 150 feet above the river; and the Cliff Swallow (*Hirundo lunifrons*) frequently constructs its mud-nests in the same bank. No specimen is recorded in the 'Fauna Bor.-Am.;' but Mr. Bernard Ross gives *C. riparia* abundant as far north as the Arctic Sea.

43. PROGNE PURPUREA.

No specimen is recorded in the 'Fauna Bor.-Am.,' although the bird is noted; so that on mine, from the Saskatchawan ('Ibis,' vol. iv. p. 4), rests the undoubted occurrence of the Purple Martin to the west of Canada and north of the United States.

AMPELIS GARRULUS.

The European Wax-wing was obtained by both Mr. Drummond and Sir John Richardson, as recorded in the 'Fauna Bor.-Am.,' in the Mackenzie River district; and specimens and eggs have since been collected in that locality by Mr. Bernard Ross and Mr. R. Kennicott. A specimen was shot in February, which stamps it as a much more northern bird than the following species.

AMPELIS CEDRORUM.

The 'Fauna Bor.-Am.' records a specimen of this species killed on the south branch of the Saskatchawan. The "Wax-wing" is also known to the inhabitants of Red River Settlement. On the 25th of August, while travelling at the western base of the Rocky Mountains, near the Kootonay River, in latitude 49°, I saw a number of Cedar Birds, of which I killed a couple: one proved to be a male in the young plumage; it was $6\frac{5}{8}$ in. long, and $3\frac{3}{4}$ in. in the wing, which seems to prove its being *A. cedrorum*. Their stomachs were filled with a delicious berry, called by the Cree Indians and half-breeds the "Sasketoon."

44. COLLYRIO BOREALIS.

It will be seen by the date of one of my specimens ('Ibis,' vol. iv. p. 5) that this Shrike is a winter bird on the Saskatchawan. Mr. Murray also notices it from Hudson's Bay, and Mr. Ross on the Mackenzie. A figure of a female is given in the 'Fauna Bor.-Am.'

45. COLLYRIO EXCUBITOROIDES.

The White-rumped Shrike is only a summer visitor to the north. Sir John Richardson considers that it does not go further north than 54°, and that only in the western plains. Mr. Ross, however, has found a Shrike in the Mackenzie River, which he records, with a mark of doubt, as being *C. ludovicianus*. The specimen given in the 'Fauna Bor.-Am.' was from Fort Carlton,—the same locality as mine ('Ibis,' vol. iv. p. 5), which was a female,—obtained, with a nest of seven eggs, by M. Bourgeau. The nest was in a willow-bush, about five feet from the ground, made of *Artemisiæ* and fine grass, which exactly agrees with Mr. Drummond's observations.

Collyrio elegans is given in the 'Fauna Bor.-Am.,' from a specimen presented to the British Museum, from some part of the fur-countries: no particulars are known.

46. VIREO OLIVACEUS.

Besides my specimen ('Ibis,' vol. iv. p. 5), the 'Fauna Bor.-Am.' records one from the Lower Saskatchawan, and Mr. Ross from the Mackenzie.

47. VIREO GILVUS.

My specimen of the Warbling Vireo killed on the Saskatchawan ('Ibis,' vol. iv. p. 5) was the only one I knew of from the interior, until I found that Mr. Ross had obtained it on the Mackenzie.

V. bartramii of Swainson, considered by Prof. Baird to be *virescens* (Vieill.), is given in the 'Fauna Bor.-Am.,' but only from the Columbia, and therefore cannot be included in this list.

48. MIMUS CAROLINENSIS. (See 'Ibis,' vol. iv. p. 5.)

I noticed that this bird differed from Wilson's description in the top of the head being dark brown, and the colour of the feet (when fresh) purple-brown; also in being difficult of approach —in fact, a shy bird. A specimen is also given in the 'Fauna Bor.-Am.,' from Fort Carlton, on the Saskatchawan.

49. Harporhynchus rufus.

The 'Fauna Bor.-Am.' records a specimen of the Brown Thrush from Fort Carlton, besides my own ('Ibis,' vol. iv. p. 5).

50. Cistothorus palustris.

The Long-billed Marsh Wren, besides being obtained by myself near Fort Carlton ('Ibis,' vol. iv. p. 5), was procured by Mr. Drummond on the eastern declivity of the Rocky Mountains, in latitude 55°. The time of its arrival and departure in Pennsylvania, mentioned by Wilson, and a few differences in colouring from that given by the same author, led me to suppose at the time that my specimen might be of a more northern and, perhaps, western species. However, all the specimens here referred to have passed through the hands of Dr. Sclater, than whom I suppose there is not a better authority on American birds in this country.

51. Troglodytes parkmanni.

My specimen ('Ibis,' vol. iv. p. 5) has been referred to this species. May not also that mentioned in the 'Fauna Bor.-Am.' as *T. aëdon,* from the Rocky Mountains, in lat. 55° N., be the same?

With respect to other Wrens, it is not unlikely that *T. hyemalis* may be found in the interior, though the 'Fauna Bor.-Am.' does not mention it beyond Lake Huron. The Rock Wren (*Salpinctes obsoletus*) has been obtained on the high central plains in American territory, as far north as Fort Union on the Upper Missouri; it may consequently be looked for on the British prairies.

52. Sitta canadensis.

Besides inhabiting the Saskatchawan ('Ibis,' vol. iv. p. 5), the Red-bellied Nuthatch is identified from Red River Settlement by a specimen in the Smithsonian Institution, from Mr. Donald Gunn.

It is worthy of note that not one of the five foregoing birds has been collected by Mr. Ross in the Mackenzie River district. They probably do not go so far north.

53. Parus septentrionalis.

Four specimens collected by me ('Ibis,' vol. iv. p. 5), after careful comparison, were pronounced to be of this long-tailed western and northern species. It seems to be resident in the interior, and is one of the few birds to be met with during the long and dreary winter. Mr. Ross mentions it as "not rare" on the Mackenzie. The voice of this bird is like the first few notes of the peculiar call of the White-throated Sparrow (*Zonotrichia albicollis*). In winter, on the Saskatchawan, I found it feeding on the cones of the willow-bushes; and M. Bourgeau, who used to keep us in food during the rather "hard times" at Fort Carlton by snaring rabbits (*Lepus americanus*), declared that this bird ate the eyes of the rabbits when in his snares.

Parus atricapillus is given by Mr. Ross as rare, but a winterer on the Mackenzie, and is included in the 'Fauna Bor.-Am.;' but at the time that work was compiled, *P. septentrionalis* was not recognized as a distinct species.

54. PARUS HUDSONICUS.

This bird, included in my original list ('Ibis,' vol. iv. p. 5), does not seem to range to the western plains; for neither during winter nor summer did I find it, after leaving the thickly wooded country to the east of Lake Winipeg. I should mention that, although I did not procure a specimen, I have not the least doubt of this bird, as it was an old acquaintance of mine in Nova Scotia, where I had shot many. I now find, however, that Mr. Ross has obtained the Hudson's Bay Tit on the Mackenzie.

55. EREMOPHILA CORNUTA.

Besides my specimen from Fort Carlton ('Ibis,' vol. iv. p. 5), the 'Fauna Bor.-Am.' records one from the same locality, while Mr. Murray mentions some from the shores of Hudson's Bay, whence I have since received specimens myself. My measurements range from 7 to 7½ in. in length, and 4¼ to 4½ in. in the wing. I found the Shore Lark on the lower part of the Saskatchawan River, in small flocks, for about a week from the 4th of October, 1857. In the following spring I observed it near Fort Carlton on the 26th of April, and it was common on the prairies by the 2nd of May. I may here observe that the Calandre Lark given in the 'Fauna Bor.-Am.,' from a specimen presented to the British Museum by the Hudson's Bay Company, is not recognized in later works on American ornithology.

56. HESPERIPHONA VESPERTINA.

The authors of the 'Fauna Bor.-Am.' were mistaken in considering the Evening Grosbeak as a summer visitor to the Saskatchawan. The fact is, it only inhabits that region during the winter season, and was not observed by me subsequent to the 22nd of April; its breeding-country must consequently be far to the north, whence it arrived at Fort Carlton in the middle of November. The four specimens recorded ('Ibis,' vol. iv. pp. 5 & 6) were shot in a grove of maple-trees just outside the stockades of Fort Carlton. The maple is by no means a common tree on the Saskatchawan, one species only, the Ash-leaved (*Acer fraxinifolium*), reaching so far north and west. It is found in small groves in sheltered situations in the river valley, and these places are resorted to in the spring by the Indian women for the purpose of sugar-making. This operation is carried on in a very primitive manner, the tree being simply notched, and a piece of wood driven in just below the notch, to lead the sap, from the end of which it drips into little pannikins of birch bark laid at the foot of the tree to receive it. These are visited once or twice a day, according to the yield, which depends very much on the weather, frosty nights and warm days being the best. The syrup thus collected being boiled down in kettles, sugar is produced in the form of a hard cake—very pleasant to eat by itself, but nothing to be compared to cane-sugar in its sweetening property. The maples commenced to "run," or rather drip, on the 28th of March—the spring (1858—a rather early one) that I resided at Fort Carlton. Any unusually cold weather occurring will put a stop to the flow of sap, and cause lamentations among the old Indian squaws. But to return to the Grosbeaks: both species, the Evening (*H. vespertina*) and the Pine (*Pinicola canadensis*), were to be found, on and off, in small parties in the maple-trees I have mentioned, near Fort Carlton, during the whole winter; but the former were never as numerous as the latter. They appeared to feed alike on the seeds of the maple. For some days early in March, I lost sight of my friends; but on the 14th I was again allowed the gratifying sight of a flock of about five-and-twenty Evening Grosbeaks, which I took to be some that had wintered more to the south, and were merely passing on their northward journey, having only stopped for the purpose of making a meal on their favourite food. Again, on the 24th of the same month, I found another travelling party, one-third of which only were females. This singularity I had moreover invariably noticed during the winter, that while of the Pine Grosbeaks those in the female plumage predominated, among the Evening Grosbeaks there were always as many, and usually more, in the brilliant dress of the males. Are the young birds longer in coming to maturity in the one species than in the other? Although I did not observe the Pine Grosbeak as late in the spring as the other, yet in autumn I saw it more than two weeks earlier, namely, on the 28th of October. The Evening Grosbeak is considered to be a western bird, and seems common on the Columbia River flowing into the Pacific. It has a very sharp and clear note in winter, is an active bird, and will stand a good charge of shot. The males and females, of which I examined a good number, differed but little in size, being from $7\frac{5}{8}$ to 8 in. in length, and the closed wing from $4\frac{3}{8}$ to $4\frac{5}{8}$. In winter the bill is of a light dull greenish yellow; eye dark hazel; feet flesh, and claws brown. Descriptions of both male and female appeared in the 'Zoologist' for 1859 (p. 6325), which I took from good specimens; and I have a couple of very well marked ones still in my possession. The figure in the 'Fauna Bor.-Am.' is good.

57. PINICOLA CANADENSIS.

This species extends from Mackenzie River to Hudson's Bay (see preceding, No. 56; also 'Ibis,' vol. iv. p. 6, and Mr. Ross's list). Sir John Richardson mentions an instance of its wintering at York Factory, on Hudson's Bay.

58. CARPODACUS PURPUREUS. (See 'Ibis,' vol. iv. p. 6.)

The stomach of one of the Purple Finches which I shot in the spring contained the centres of young aspen-leaves. It is also given in the 'Fauna Bor.-Am.,' from the Saskatchawan.

CHRYSOMITRIS TRISTIS.

This American Goldfinch is mentioned in the 'Fauna Bor.-Am.' as passing three months of the summer in the fur-countries; an individual is said to have been killed, but the locality is not stated. I may remark that the "fur-countries" is rather an indefinite region; however, I have little doubt that the bird may be found on the Saskatchawan, as there is a specimen in the Smithsonian Institution from the Blackfoot country, which lies on the Upper Missouri, and stretches northward across the international boundary.

59. CHRYSOMITRIS PINUS. (See 'Ibis,' vol. iv. p. 6.)

I do not know of the Pine Finch having been obtained in the interior previously to my specimen from the Saskatchawan.

CURVIROSTRA LEUCOPTERA.

The White-winged Crossbill is given in the 'Fauna Bor.-Am.' as inhabiting the "dense spruce-forests" of the north; Mr. Murray records it from Hudson's Bay, and Mr. Ross gives it as a winter bird on the Mackenzie. Pine-woods being scarce on the Upper Saskatchawan, I did not fall in with it.

ÆGIOTHUS LINARIA.

ÆGIOTHUS CANESCENS.

Five specimens in my collection, obtained at Fort Carlton in the months of November, December, January, and March, were omitted in the original list ('Ibis,' vol. iv. No. 13), on account of the difficulty of deciding to which species they belonged. Neither can I now pretend to determine, as the specimens have not been returned from Washington; but only say that, from Professor Baird having one from Red River Settlement in the Smithsonian Institution, which he considers to be *Æ. canescens* of Gould, and Mr. Ross giving both on the Mackenzie, we may presume that two species inhabit the interior. Mr. Murray has also satisfied himself that a specimen from Hudson's Bay is *Linota borealis*=*canescens* (Gould). I think the best I can do is to say only that a species of Redpole is a winter resident on the Saskatchawan, where it is common enough, and leave this much-disputed question alone*.

LEUCOSTICTE TEPHROCOTIS.

The Grey-crowned Finch was described in the 'Fauna Bor.-Am.' from a specimen killed on the Saskatchawan in May. I know nothing more about it.

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* Mr. Coues's Monograph of the *Ægiothi*, of which we have spoken in our last volume ('Ibis,' 1862, p. 186), should be consulted on this point. Probably Capt. Blakiston's specimens may be referable to *Æ. exilipes*, Mr. Coues's new species.—ED.

PLECTROPHANES NIVALIS.

Of the Snow Bunting it is needless to say more than that it is very generally distributed throughout the country, from Hudson's Bay to the Rocky Mountains, and has been found breeding in the north; and that a few small parties sometimes winter on the plains of the Saskatchawan and at Red River Settlement where they can find any patches of ground free from snow, while the main body goes further south. On the Saskatchawan River they may be met with early in October, and at Red River Settlement by the 10th. Great flocks left Fort Carlton, bound southward, in the first few days of November; and after the 3rd of December I saw none there till late in March. At Red River Settlement, in 1859, I saw some on the 7th of April, and by the 10th there were large flocks. It was a very late spring, and large numbers were passing in their migration till the end of the month. In spring, I have seen them perched on the shingled roofs of the cattle-sheds in the warm sun, chirping away quite merrily with a clear note, such as I never heard them utter in the autumn; I consequently presume that in their breeding-places in the far north they may be found to have a pleasant song. I suppose that the Snow Bunting does not often perch on trees, although I once observed one do so; but as it was just after I had taken a shot into a flock of them, I fancied it might have been a wounded bird.

60. PLECTROPHANES LAPPONICUS.

Besides the specimen already recorded from the Saskatchawan ('Ibis,' vol. iv. p. 6), I have received the Lapland Bunting from the western shore of Hudson's Bay; and Mr. Murray notes it from the same locality. Sir John Richardson says that it breeds in the moist meadows on the shores of the Arctic Sea; and Mr. Ross includes it among the birds of the Mackenzie. Towards the end of May they were in large flocks on the prairies at Fort Carlton, and were then very fat.

61. PLECTROPHANES PICTUS.

In the 'Fauna Bor.-Am.' it is stated that this Bunting was observed associating with the preceding species at Fort Carlton. In the Smithsonian Institution there is a specimen from Pembina, 49° N. lat., on the Red River of the North, which flows into Lake Winipeg, collected by Mr. R. Kennicott in September. Mr. Murray records it from Hudson's Bay; and Mr. Ross from the Mackenzie. My specimen ('Ibis,' vol. iv. p. 6) I shot at the summit of the "Boundary Pass" of the Rocky Mountains—so named by me on account of its western end being in United States territory, while the eastern is on the British side of the line. It was on the 6th of September, when I was recrossing the mountains from the Pacific side. The day previous having been Sunday, I had remained encamped, as was my usual custom, with my small party (which then consisted of only two Red River half-breeds, a Cree Indian, and a dozen horses), in a valley in the midst of the mountains. In fact, we had been driven to halt sooner than we had intended on the Saturday afternoon, on account of a severe storm of rain and wind; and even if we had wished, I do not think we could have travelled very well on Sunday; for the storm continued with much violence, and what fell upon us as rain was heavy snow higher up on the mountains. Next day, however (Monday), we made a start at 6 A.M., and travelled up the course of a creek until ten o'clock, when we halted for breakfast. Suspecting that we had a good day's work before us, I delayed as little as possible; so, repacking the horses, we were under way again in less than an hour and a half. After two or three miles we began a steep ascent, and were soon on ground entirely covered with snow, in which the tracks of some Kootonays, on whom I depended for guiding us across the pass, were visible. Passing along the edge of a very steep hill, it was as much as our horses or ourselves could do in some places to keep our footing. We now descended, crossed a thickly wooded gully, and then commenced the ascent to the watershed through thick forests. The snow increased in depth as we advanced, until on arriving at the crest it was two feet on the level, and in places drifted to double that depth. It was cold work trudging through the snow in thin leather mocassins, without socks; and, to make matters worse, it was blowing fresh, with more snow falling thickly. However, on arriving at the dividing ridge, with the assistance of the Indian, I unpacked the horse with the instrument-boxes, and obtained a reading of the barometer, which gave an altitude of 6030 feet. Packing up again, we followed the crest of the ridge for a short distance, and were just going to descend, when I espied a bird on some open ground where the snow had been nearly all drifted away by the wind. All I had to do was to pull my gun out of its cover, and discharge the barrel which contained shot (for I seldom kept more than one of the two loaded with ball), and I secured a specimen of this Bunting. Of course I did not know what species it was at the time, and, considering the situation and circumstances, did not stop to inquire, but tied the bird up as nicely as I could, and commenced the descent. This was even more steep than the western slope, and for some distance we followed a zigzag path. It was not, however, very bad; and we soon arrived at a mountain torrent flowing eastward, thus regaining the waters which find their way to the Atlantic. The trail led on through thick forests down a valley due east, on either side of which the rocky tops of the mountains were often of very curious shapes, and the strata in places much contorted. There were also some magnificent cliffs—sheer walls of rock, rising hundreds of feet vertically, while the cascades of snow-water tumbling down the narrow gullies added motion to this wild and stern scenery. The snow became less and less as we descended, and on reaching the end of the valley we came to a snug little patch of prairie, where we found the Kootonay Indians encamped; and I was glad enough to unsaddle and let my horse go free, for we had travelled this day from six to six, with a halt of only one hour and a half. The horses had the first half of the next day to rest, and I took the opportunity, among other things, to skin and preserve some specimens.

62. PLECTROPHANES ORNATUS.

The specimen ('Ibis,' vol. iv. p. 6) obtained by me, about eighty miles S.W. of Fort Carlton, is the only one I know of from the interior. The Chestnut-collared Bunting has, however, been found by the Americans on the plains of the Upper Missouri.

63. PASSERCULUS SAVANNA.

There were three specimens of the Savannah Sparrow in my collection from Fort Carlton, although only one appeared in the original list ('Ibis,' vol. iv. p. 6). I find, moreover, that there is one from Red River Settlement in the Smithsonian Institution; Mr. Ross also notices it on the Mackenzie. This bird is not included in the 'Fauna Bor.-Am.,' nor is it mentioned by Mr. Murray among skins which he has received from the neighbourhood of Hudson's Bay; but this is not astonishing, as it is one of those quiet retiring birds which would be overlooked, except by a diligent ornithologist, and neither its habits nor its plumage are likely to attract the attention of a casual observer. I believe that I was the first to discover it in Nova Scotia, where I distinguished it from others of the genus by its note and manners. The former is a feeble chirping, and when you approach it, it will fly from one small bush to another without mounting in the air; it perches also on stone walls, and often on the ground, where it runs smartly. Wilson's description of the Savannah Sparrow is not minute enough; for he makes no mention of the dividing-line of white on the crown,—of the line of brown running from the lower mandible and bordering the white throat,—of a second line of brown from the slit of the mouth, encircling the ear-coverts, and joined, or nearly so, by a third from the back of the eye,—of the decided line of pale white which is thus left from the lower mandible to the back of the ear-coverts, between the first two of these brown lines; neither does he remark, as he has in the case of the Tree Sparrow (*Spizella monticola*), the almost concealed spot of brown on the breast, which is very apparent in the living bird, but might be passed unnoticed in a dead one or preserved specimen. Those individuals I have measured have been between 5⅜ and 5½ in. in length, and 2¾ and 2⅞ in the wing. The Savannah Sparrow was a common bird at Fort Carlton during spring, where I observed it by the 4th of May. I also shot one near the eastern base of the Rocky Mountains in August, to the westward of which barrier I believe the bird has not been observed.

PASSERCULUS SANDVICHENSIS.

Observed by Mr. Ross on the Mackenzie, as well as *P. anthinus*; but this latter he marks as uncertain.

64. POŒCETES GRAMINEUS.

The Bay-winged or Grass Finch is mentioned in the 'Fauna Bor.-Am.' as an inhabitant of the Saskatchawan, where I obtained my specimen ('Ibis,' vol. iv. p. 6); and I find that there is a specimen in the Smithsonian Institution, from near the Red River Settlement. The eggs obtained by M. Bourgeau ('Ibis,' vol. iv. p. 6) were of a greyish white, blotched with light venetian red. The bird was caught on the nest by means of a butterfly-net.

65. ZONOTRICHIA LEUCOPHRYS.

I found the White-crowned Sparrow was not uncommon along the east side of the Rocky Mountains in September, whence my specimen was obtained ('Ibis,' vol. iv. p. 6). Mr. Murray has seen specimens from Hudson's Bay. It is also recorded in the 'Fauna Bor.-Am.' from Great Bear Lake, and by Mr. Ross from Great Slave Lake.

66. ZONOTRICHIA ALBICOLLIS.

The White-throated Sparrow, like the last species, must be pretty generally distributed throughout the interior, as my specimen ('Ibis,' vol. iv. p. 6) was from Fort Carlton. Mr. Murray has noted it from Hudson's Bay; and I found it east of Lake Winipeg till the 15th of September, where my attention was drawn to it by its peculiar note. Sir John Richardson found it breeding on the Saskatchawan and at Great Bear Lake; and Mr. Ross has obtained eggs on the Mackenzie.

ZONOTRICHIA GAMBELII.

Mackenzie River to Arctic Circle (Bernard Ross).

67. JUNCO HYEMALIS.

At Fort Carlton, in the spring of 1858, I observed a single specimen of the Snow Bird on the 4th of April, but not again till the 16th, when my specimen ('Ibis,' vol. iv. p. 6) was obtained. This bird was common (the 'Fauna Bor.-Am.' says "uncommon") during my boat voyage the preceding autumn between Hudson's Bay and the Saskatchawan; and I observed it in company with the Tree Sparrow (*Spizella monticola*) till the 18th of October. I also saw what I took to be this bird on the eastern slope of the Rocky Mountains; but it may have been *J. oregonus,* the existence of which species I was not aware of at that time.

JUNCO OREGONUS.

Mackenzie River (Bernard Ross).

68. Spizella monticola.

No sailor ever looked out more anxiously for the land than did I, after the long and dreary winter spent at Fort Carlton, watch for the arrival of the first harbinger of approaching spring. A few days of mild weather (which set in before the middle of March) having made considerable diminution in the depth of the snow caused me to look out with more than usual anxiety; and each day I mounted a convenient eminence near the fort, telescope in hand, in expectation of catching sight of some winged voyagers. At last, on the 15th, I was rewarded by the appearance of a Hawk, which I took to be the Sparrow-Hawk, sailing along high in the air; but, as a fresh nor'-wester was blowing, he was soon out of sight. I subsequently learned that, on the 14th, a White-headed Eagle, and considerable flocks of small white birds, which were doubtless Snow Buntings, had been seen by some buffalo-hunters on the prairies between Fort Carlton and the south branch of the Saskatchawan, where the snow had in many places disappeared from the ground; but, as I have before observed when speaking of *Plectrophanes nivalis*, I believe that some of these hardy birds remain in certain situations during the entire winter, and we must consequently look upon them as winterers. Waiting patiently for a few days, on the 18th I started out after dinner with my gun, and took a track which led from the fort across the plain to the south-east. The forenoon had been overcast with the last touch of a north-easter, bringing its usual accompaniment of snow; but the wind having died away by the middle of the day, the sun broke through and dispersed nearly all the cloud, so that, although the thermometer was only just up to the freezing-point, it was a delightful afternoon. There was still sufficient snow on the ground to cause walking to be awkward, but I laboured along in expectation of falling in with something in the way of the Falcon tribe, for such birds are said to be the first to make their appearance,—which, by the by, I have always thought rather curious; for surely, if the Hawks come, they must have some smaller birds to live upon, and I fancy that if we searched diligently we should find them. Having gone some distance, I turned homewards with the full intention of inserting in my journal, "Not a single spring visitor;" but when I reached the bottom of the hill leading down from the plain into the river valley in which the fort is situated, I observed a dull-coloured bird fly across the track, and alight among some maple-trees; I was soon up with him, and bringing him down, I found to my delight that it was a Tree Sparrow (*S. monticola*) ('Ibis,' vol. iv. p. 6). In my joy at having killed the first spring bird, I yelled a sort of Indian war-whoop, and went off whistling to the fort. Its crop contained the interior grains of the Snow-berry (*Symphoricarpus racemosus*), which M. Bourgeau, the botanist, determined for me, and said that he had met with the plant "*partout*" west of Lake Winipeg, and that it was common as a bush about two feet high in the river valley at Fort Carlton. A fresh south-west wind blew on the 19th, and on the 20th I found another Tree Sparrow, and the next day a party of seven or eight. After this the spring wore slowly on, and it was some time before we received any more additions in the ornithological way; so that the Tree Sparrow may be considered by far the earliest of the *Insessores*. The 'Fauna Bor.-Am.' remarks that it leaves the Saskatchawan in the third week in April, and goes farther north to breed. Mr. Murray has received specimens from Hudson's Bay; and Mr. Ross records it on the Mackenzie; while I found it from York Factory, on the western coast of the Bay, in August, to Lake Winipeg and up the Saskatchawan till the 14th of October. It was then nearly always in company with *Junco hyemalis*; but that bird did not arrive until some time after it in the spring. The Tree Sparrow may always be distinguished from among the other sparrow-like Buntings, when in a wild state, by the chestnut of the head and the dark spot on the breast. In 1858 I met with it as late as the 28th of October, on the north branch of the Saskatchawan, and found that its range extended to the eastern base of the Rocky Mountains.

SPIZELLA SOCIALIS.

Notwithstanding that the Chipping Sparrow ranges across the continent from the Atlantic to the Pacific, it has not been found, until lately, in the interior of British North America, except at Pembina, where the boundary-line (the 49th parallel) crosses the Red River of the North, from which locality there is a specimen in the Smithsonian Institution. Mr. Ross, however, in his published list referred to at the beginning of this paper, records both the common one and the striped-crowned variety on the Mackenzie.

69. SPIZELLA PALLIDA.

The Clay-coloured Bunting attracted my attention first on the 21st of May, at Fort Carlton, by its peculiar note, which resembles, as much as anything I know, a sharp edition of the buzzing made by a fly in a paper box, such as boys confine them in for amusement; or I may also liken it to a very faint imitation of the sound of a watchman's rattle. This it utters when perched on some young tree or bush, sometimes only once, but at others as many as four times in quick succession. The eggs, found by M. Bourgeau ('Ibis,' vol. iv. p. 7) in a nest in a Snow-berry bush two feet from the ground, were four in number, of a greenish blue, speckled at the large end with brown. This bird is noticed in the 'Fauna Bor.-Am.,' but nothing concerning its range; Mr. Ross also found it on Great Slave Lake. It does not appear to inhabit the eastern part of the continent.

70. MELOSPIZA MELODIA.

Several specimens of the Song-Sparrow were shot at Fort Carlton ('Ibis,' vol. iv. p. 7). First seen on the 21st of April.

71. MELOSPIZA LINCOLNII. (See 'Ibis,' vol. iv. p. 7.)

Also obtained at Fort Carlton, and by Mr. Ross on the Mackenzie.

MELOSPIZA PALUSTRIS.

Rare at Great Slave Lake (Bernard Ross).

PASSERELLA ILIACA.

The 'Fauna Bor.-Am.,' as well as Mr. Ross, notes the Fox-coloured Sparrow as breeding in the wooded districts of the fur-countries, up to 68° N. I observed it (for it was a bird I knew well in Nova Scotia) between Hudson's Bay and Lake Winipeg in September, and on the Saskatchawan north branch in October.

72. GUIRACA LUDOVICIANA.

Besides my specimen ('Ibis,' vol. iv. p. 7), the 'Fauna Bor.-Am.' records the Rose-breasted Grosbeak from near the Saskatchawan; and Mr. Donald Gunn sent one, from Red River Settlement, to the Smithsonian Institution. Both *Guiraca melanocephala* and *Cyanospiza amœna* have been obtained from Fort Union, at the mouth of the Yellowstone, and may reach British territory.

Pipilo erythrophthalmus.

A specimen from Red River Settlement, procured by Mr. Donald Gunn, is in the Smithsonian Institution at Washington.

73. Pipilo arcticus.

This bird, described by Swainson in the 'Fauna Bor.-Am.,' is there stated to frequent moist shady clumps of wood, being generally seen on the ground. I only shot one individual at Fort Carlton ('Ibis,' vol. iv. p. 7); but I noted at the time in my journal (which I wrote from day to day), "This bird uttered a loud harsh note, and, unless disturbed, was usually perched near the top of a conspicuous tree in the woods." The eye, in an adult male, was bright reddish orange.

Dolichonyx oryzivorus.

The Boblink, or "Skunk-bird" of the Cree Indians, mentioned in the 'Fauna Bor.-Am.' as a summer visitant to the Saskatchawan, was only once seen by me, when travelling between Forts Carlton and Pitt. Had I been stationary during the summer (for I defy any one to collect much when constantly travelling by land), with nothing to do besides collecting birds, I might have picked up many more to swell this list; but, as it was, my ornithological researches were mostly confined to the winter (when there were but a few resident birds) and the spring. There is a specimen of this species in the Smithsonian Institution, from the Red River of the North, in lat. 49°.

74. Molothrus pecoris.

Although the Cow-bird is noticed in the 'Fauna Bor.-Am.,' no specimen is mentioned. I observed it at Red River Settlement on the 28th of April, and as far west as the base of the Rocky Mountains. Three individuals which I shot at Fort Carlton, all males ('Ibis,' vol. iv. p. 7), measured 7½ to 7⅞ in. in length, and 4⅜ to 4⅝ in. in the wing. They are easily mistaken for Grackles. Mr. Ross mentions the Cow-bird as very rare on the Mackenzie.

75. AGELÆUS PHŒNICEUS.

The Swamp Blackbird ('Ibis,' vol. iv. p. 7) arrived in the neighbourhood of Fort Carlton on the 4th of May, 1858; or, at least, I did not observe it before that, notwithstanding that I was out every day at that season with my gun. I fancy, however, that it is an early spring bird; for I saw it at Red River Settlement the following spring (which was a very late one) on the 26th of April. No doubt, had there been a garden or other cultivated land about the fort, I should have found it earlier on the Saskatchawan; but husbandry is almost entirely neglected in the territories of the Hudson's Bay Company, where vegetable diet, excepting wild berries, is despised by the carnivorous fur-traders and voyageurs. I found this bird as far west as the Rocky Mountains. Mr. Murray records a specimen from Hudson's Bay, and Mr. Ross on the Mackenzie.

AGELÆUS GUBERNATOR.

Common on the Mackenzie (Bernard Ross).

AGELÆUS TRICOLOR.

Rare on the Mackenzie (Bernard Ross).

These are two more instances of the Pacific-coast birds frequenting the Mackenzie River district.

76. XANTHOCEPHALUS ICTEROCEPHALUS.

I saw this bird at Red River Settlement on the 29th of April. Two, shot at Fort Carlton in May ('Ibis,' vol. iv. p. 7), had the remains of insects and Snow-berries (*Symphoricarpus racemosus*) in their stomachs. Mr. Murray also notices it from Hudson's Bay; but whether this means the shores of that bay, or from some part of the H. B. Company's territories, I cannot tell. Sir John Richardson did not observe it eastward of Lake Winipeg, while its eastern limit in the United States is Illinois. However, it has been found in Greenland, and may range to the eastward in the north.

77. STURNELLA MAGNA.

My specimen ('Ibis,' vol. iv. p. 7), having been compared with specimens of both *S. magna* and *S. neglecta* given me by Professor

Baird, is considered to be of the original species. One, however, in the Smithsonian Institution, from about 60 miles south of Red River Settlement, is called *S. neglecta.* Probably both species inhabit the British prairies. One or the other was seen at Fort Carlton by the 11th of April, and found as far as the western base of the Rocky Mountains, on the Tobacco Plains. It was supposed to have been seen also near Fort Carlton as late as the 3rd of November, having been taken by one of the gentlemen at the fort for a Quail.

78. ICTERUS BALTIMORE.

Besides my specimen ('Ibis,' vol. iv. p. 7) of this showy bird, it is likewise recorded in the 'Fauna Bor.-Am.,' from the Saskatchawan.

79. SCOLECOPHAGUS FERRUGINEUS.

The specimen recorded ('Ibis,' vol. iv. p. 7) as killed on the 31st of March was the first which I saw at Fort Carlton in the spring; it was in good condition, and the stomach contained masticated insects, which appeared to be small *Carabi.* It frequented a small pond still partially covered with ice and snow. It was a male, and measured 9 in. in length, and $4\frac{5}{8}$ in. in the wing. The Rusty Blackbird is also given by Mr. Ross as common on the Mackenzie to the Arctic Circle.

80. SCOLECOPHAGUS CYANOCEPHALUS.

My specimen of this bird ('Ibis,' vol. iv. p. 7) was a male, and measured 10 in. in length, and $5\frac{1}{8}$ in. in the wing. A female procured at the same time measured $8\frac{1}{2}$ and $4\frac{3}{4}$ in., while two others came between these measurements. Along with these birds two nests were taken, each containing six eggs. There were several together in a swampy place, from one foot to four feet above the ground, on willow-bushes. One, however, was at the base of a willow-bush and resting on the ground, where a small excavation had been formed, in which the nest was made, in this case with grass without any mud, and lined with horsehair. Not having been aware of the existence of any species but the Rusty Grackle, it was quite by chance that I obtained a specimen of Brewer's bird. I believe the reason was because I fancied I observed a difference in the birds, considering some to be larger than others; but

I find no notes concerning them in my journal, which I have carefully gone over. The nests which I found were usually, as above noted, in swampy thickets, about six feet from the ground, of about the same size as those of the American Robin, and made much in the same way, of sticks, mud, &c., and lined with hair and fine grass; they were generally affixed to the contiguous stems of a willow-bush. Now, whether in thus describing the nest I am speaking of *S. ferrugineus* or *S. cyanocephalus*, I am at a loss to know. All I can say is that I obtained the two birds in the same locality; but one was early in the spring, and the other in June. Whether one is a more northern bird than the other, or whether one builds on the ground, and the other on bushes, I cannot at present undertake to say; further researches must determine. In the meantime I will observe that I found one or other of these birds common from York Factory, on Hudson's Bay, to the Saskatchawan Plains, where they remained till late in October. *S. ferrugineus* has been noticed in the 'Fauna Bor.-Am.,' and Mr. Murray records specimens from Hudson's Bay; but, except a specimen from Pembina, where the international boundary-line crosses the Red River of the North, which is now in the Smithsonian Institution, *S. cyanocephalus* had not, I believe, been previously obtained in the interior of British North America. Now that I see Mr. Ross's list, however, I find that he has also procured it on the Mackenzie.

81. QUISCALUS VERSICOLOR.

In September I found the Crow Blackbird sparingly between Hudson's Bay and Lake Winipeg, observing the last one on the Lower Saskatchawan on the 4th of October. The following spring, I did not see this species at Fort Carlton before the last week in April; so that it is not nearly so early a bird as the Rusty Grackle. M. Bourgeau found the nests clustered together in a willow-thicket, at the end of June, on the Saskatchawan Plains; they were over six feet above the ground, and no mud was used in their manufacture. One was also found in the old nest of a Magpie. With regard to the peculiar mode of carrying its tail which this bird has during flight, I noticed that it was only done by the males, and that instead of being a twist of the whole tail, as has been supposed, and which it certainly resembles, it is done by the outer tail-feathers being considerably elevated and closed inward above the others, back to back. The eggs vary in the ground-colour from greenish blue to olive. My specimen ('Ibis,' vol. iv. p. 7) was from Fort Carlton. I have received one from Hudson's Bay; Mr. Donald Gunn has collected them at Red River Settlement, and Mr. Bernard Ross on the Mackenzie.

82. CORVUS CARNIVORUS.

The American Raven (the "Crow" or "Corbeau" of the English and Canadian half-breeds, and the "*Kā-kā-kiu*" of the Cree Indians) is very generally distributed throughout the northern interior, but seems most numerous on the buffalo plains of the west. Having lived nearly two years in the Indian country, I have had very frequent opportunities of observing the economy of the American bird, and must exonerate him from the stigma of exclusiveness which has been attached by naturalists to the family name from observation of his European brother. "Brother Jonathan" certainly, on the western prairies, is by no means a solitary bird, nor do the Indians inhabiting that region seem to hold any ridiculous ideas of ill omen, or such like superstitious notions, concerning him; it may be, that being better known, and his hoarse croak so often heard, both in times of plenty and seasons of want, he is regarded more as a familiar friend than anything else. During the day, the Raven is usually met with in pairs, except when the carcase of a dead animal draws a number together, or a general slaughter of buffaloes by the Indians affords a repast for all the wolves and ravens of the neighbourhood. At night, however, during winter, they repair to some chosen resting-place, usually a clump of trees on the edge of the prairie, and there roost in one immense body. One of such "bedrooms" was only about a mile distant from Fort Carlton, and my attention was first drawn to it by noticing that all the Ravens which I saw about sunset, no matter where I happened to be, were invariably flying towards the same point. Having been out one day with my gun, I made a point of returning to the fort in the evening by that quarter; and I was surprised by finding a clump of aspen-trees, none of which were above twenty-five feet high, or thicker than one's arm, filled with Ravens, which on my near approach took wing and flew round and round. I judged, by counting a portion, that there were upwards of fifty at that one spot: I shot one, which I preserved ('Ibis,' vol. iv. p. 7). I found that this was a regular roosting-place, and my friends continued to use it during the entire winter. What also interested me was the wonderful regularity with which they repaired to their roosting-place in the evening, and left it again in the morning, by couples, for their day's hunt. One pair used to fly directly over the fort regularly every morning; and as I sat watching for the minute-hand of the chronometer to come round to the hour of observation for the magnetic instruments, they would give a croak or two as a morning salutation,—at any rate I gave them credit for such civility, and noting the time, I found it the same, within two or three minutes; but as the days lengthened, it became a little earlier and earlier each morning. On a cloudy or unusually cold morning they were sometimes a few minutes late, but their usual time was, as near as possible, half an hour before sunrise. In March I observed that the Ravens became restless, and were often to be seen chasing one another in the air, and wheeling about in circles. I also, on some occasions, heard very prolonged croaks—more, in fact, approaching to cawing, and I judged that these signs were indicative of the approaching love-season. In April they paired off, and the roosting-place spoken of became deserted. I should be glad to discover if this habit of congregating in winter has been observed in any other species. During an excursion which I made on the prairies about a hundred miles south-west of Fort Carlton, in company with a party of hunters who went out to obtain buffalo-meat for the fort, I found several nests of the Raven, with eggs. One was in a small tree close to a lake, and not more than fifteen feet above it; it contained six eggs, was about a foot in diameter, composed of sticks, and lined with buffalo-hair and, what may seem rather singular, pieces of scarlet cloth; but these latter had doubtless been picked up about the Indian camping-grounds.

83. CORVUS AMERICANUS.

I was never fortunate enough to obtain a specimen of the "Barking Crow," or "Rook," as this bird is called, on the Saskatchawan, where it is only a summer visitor; M. Bourgeau, however, captured one with its eggs ('Ibis,' vol. iv. p. 7). I heard of this bird being seen near Fort Carlton on the 26th of March, in 1858; and Mr. Donald Gunn informed me that it arrived at Red River Settlement in 1859, which was a late spring, before the 4th of April. The 'Fauna Bor.-Am.' mentions that it does not approach within 500 or 600 miles of Hudson's Bay; but I find that Mr. Murray, whose 'Contributions to the Natural History of the Hudson's Bay Company's Territories' I have noticed before, mentions a specimen from Trout Lake post, between Lake Winipeg and Hudson's Bay. There is also a specimen in the Smithsonian Institution from Nelson River, which flows into Hudson's Bay; and Mr. Ross says that it goes as far north as latitude 61°, on the Mackenzie.

84. PICICORVUS COLUMBIANUS.

I only observed this bird in the Rocky Mountains, at the Kootonay Pass ('Ibis,' vol. iv. p. 7).

85. PICA HUDSONICA.

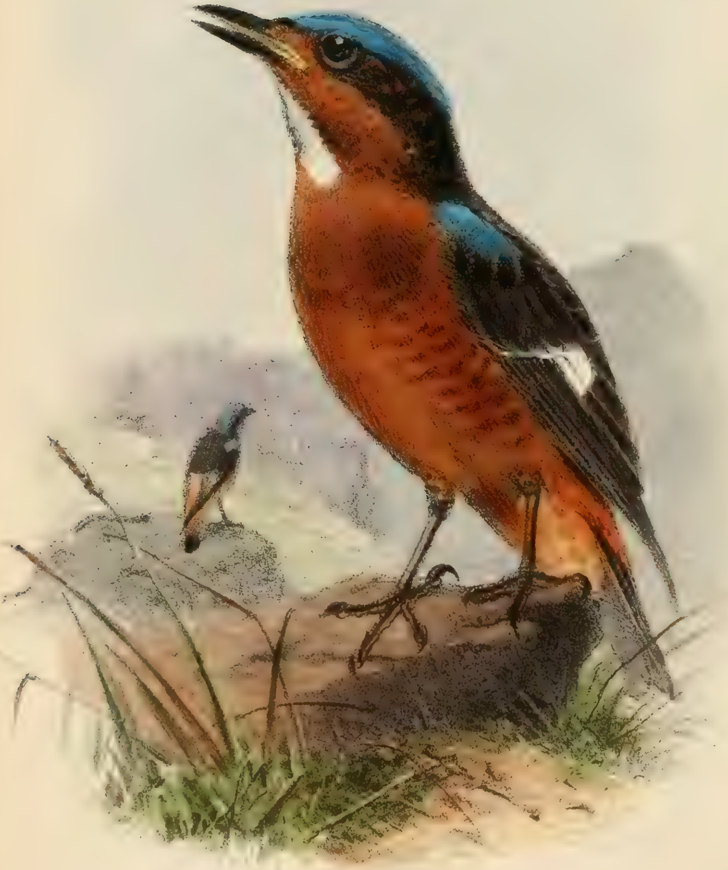
A resident during the entire year on the Saskatchawan ('Ibis,' vol. iv. p. 7), but said to be rare to the east of Lake Winipeg. Mr. Ross notices it as ranging to the west side of the Rocky Mountains in the far north.

86. CYANURA CRISTATA.

There is a specimen in the Smithsonian Institution from Red River Settlement, where I observed the Blue Jay in the spring. I also saw it in some pine-woods near Fort Carlton in March, and the previous autumn on the Lower Saskatchawan; but I never observed it to the westward. Perhaps the absence of pine-woods in the prairie country may be sufficient to account for this. The 'Fauna Bor.-Am.' mentions that it seldom visits Hudson's Bay; and during my boat-voyage I noticed the absence of it on the route between York Factory and Lake Winipeg. Mr. Ross does not include it among the birds of the Mackenzie.

87. CYANURA STELLERI.

Besides the specimen obtained by Mr. Drummond in the Rocky Mountains, and described by Swainson in the 'Fauna Bor.-Am.,' I believe mine ('Ibis,' vol. iv. p. 8) is the only other example from British territory.



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M. & N. Hanhart Im

ORŒCETES GULARIS.

88. Perisoreus canadensis.

The well-known "Whisky Jack" is a constant companion of the voyageurs on their long and wearisome journeys throughout the fur-countries. Everywhere, be it winter or summer, at the camping-place of the sledge-drivers or the more animated mid-day halt of a brigade of boats or canoes, the Canada Jay is sure to give his company uninvited, and feed on any stray bits of "pemmican" or dried-meat he can pick up. Every one who has read the narratives of arctic land-travel, or the more amusing stories of fur-traders' life, will have heard of the devices put in practice to entrap this inquisitive bird. A very common method, and one which has the advantage of not requiring mechanical aid, is for a man to lie down in the bow of a boat, when made fast to the shore, and covering his head and shoulders with a capot, keep quite quiet, while he holds a piece of pemmican in the hollow of his hand; presently Mr. Jay alights on the stern of the boat, hops closer and closer, and at last, just as he is in the act of securing the pemmican, the horny hand of the voyageur suddenly closes, and a plaintive squeak announces that his inquisitiveness has led the "Whisky Jack" into a man-trap. My specimen ('Ibis,' vol. iv. p. 8) was obtained at Fort Carlton; Mr. Murray has received one from the coast of Hudson's Bay, while it is recorded in the 'Fauna Bor.-Am.' and by Mr. Ross up to the Arctic Circle. The bird figured and described by Swainson as *Garrulus brachyrhynchus* is generally supposed to be the young of the Canada Jay.

[To be continued.]

VII.—*Additions and Corrections to the Ornithology of Northern China.* By Robert Swinhoe, Corr. Mem. Zool. Soc.

(Plate III.)

To commence with the birds of Talien Bay (for notes on which see 'Ibis,' vol. iii. p. 251).

10. Emberiza rustica, Pall., should be *E. cioides*, Temm. Faun. Japon; the same as *E. ciopsis*, Bp.

12. Alauda leautungensis, Swinhoe.

This bird is closely allied to *A. cristata*, S. of Europe, but appears to me to be distinct. It belongs to Boié's subgenus

Galerida, most of the species of which are generally understood to inhabit desert tracts. In this respect our species differs, for in Talien it seemed quite as partial to the corn-fields as the true *Alaudæ.* None of the Russian ornithologists (Pallas, Middendorff, or v. Schrenck) notice a Crested Lark throughout Siberia; I feel, therefore, a greater confidence in considering my bird distinct.

17. COLUMBA LEUCOZONURA, Swinhoe.

This is certainly the Pigeon which Pallas, in his 'Zoograph. Rosso-Asiat.' (i. p. 560), describes as a rock-frequenting variety of *C. œnas,* whence Bonaparte names it *C. rupestris.* My name must therefore sink into a synonym.

Now let us turn to the birds of Peking ('Ibis,' vol. iii. p. 323). To this list my investigations, since my arrival in England, enable me to make several necessary corrections; and a fine series of skins, collected by Mr. Fleming, of the Royal Artillery, and kindly submitted for my inspection by Mr. Whiteley, naturalist, of Woolwich, places it in my power to record several important additions.

3. EAGLE BUZZARD. *Buteo* —— ?

The want of a defined tooth in the beak in my specimen led me to refer this bird to the genus *Buteo.* It is a specimen of the Saker Falcon—*Falco sacer* of Schlegel.

5. PIED HARRIER. *Circus* —— ?

The bird observed by me must have been *Circus melanoleucus* (Gm.), as Mr. Whiteley's collection contains one of that species. It cannot therefore be referred to our Amoy Harrier, which Mr. Gurney identifies with *C. spilonotus,* Kaup.

9. ACCIPITER NISUS ?

This specimen, as well as those procured by me in South China, are all referred by Mr. Gurney to the true *A. nisus* of Europe.

From Mr. Whiteley's series I am enabled to add to the Peking list four other *Accipitres,* namely,—

(1.) POLIORNIS PYRRHOGENYS, Schleg. Faun. Japon.

There are in Mr. Fleming's collection a pair of Buzzards, in worn plumage, which Mr. Gurney considers to be of this species.

(2.) THE HOBBY. *Falco subbuteo*, L.

(3.) ACCIPITER SOLOËNSIS, Horsfield.

(4.) ACCIPITER GULARIS, Schleg. Faun. Japon.?

Larger than the last, with longer bill, but without the streaks on the throat. The British Museum has one of this species from Shanghai. This must, for the present, be doubtfully referred to the Japanese bird.

10. TAWNY OWL. *Otus brachyotus*, L.?

Erase the note of interrogation.

To the Owls I can now add

(1.) OTUS VULGARIS, Fleming.

(2.) SCOPS JAPONICUS, Schleg. Faun. Japon.

Probably identical with *S. bakkamœna*, Pennant, of India.

(3.) NINOX JAPONICA, Temm. Faun. Japon.

Mr. Gurney considers the single specimen of this to be rather referable to the Japanese than to the Indian and Malasian *N. scutulatus*, Raffles.

13. SWALLOW. *Hirundo rustica*, L.

The oldest name for this form of the Common Swallow appears to be *H. panayana*, Gmelin, and not *H. javanica*, Sparrm.

14. TIGER-SWALLOW. *Hirundo daürica.*

Should be *H. daürica*, Linn., nec Pallas. The synonym applied by the latter is *H. alpestris.*

15. SAND-MARTIN. *Cotyle riparia*?

Is undoubtedly the *C. sinensis* of J. E. Gray. It is smaller than, and quite distinct from, *C. riparia.* I have lately procured this species at Amoy.

To these three Swallows we can now add a fourth; for Mr. Fleming's series contains a mature specimen of a House-Martin (*Chelidon*), but unfortunately with its wings clipped. I exhibited this bird, with the rest of the North-China skins lent me by Mr. Whiteley, before the Zoological Society, on the 25th of November; and I will consequently extract from the paper then read my remarks on the differentiation of this species from its fellows of the genus. "In this genus there have hitherto been only two recognized species—the European Martin (*C. urbica,* L.) and the Cashmere Martin (*C. cashmiriensis,* Gould), the Nipal Martin (*Delichon nipalensis,* Moore) being of an intermediate form between the true Martins and the Sand-Martins. The Cashmere Martin is at once distinguishable from its English congener by its much smaller size, by its deep-brown axillaries, and by its shorter and much less furcate tail, as also by the browner colour of its upper parts. That it is a good species there can be no doubt. Mr. Whiteley's specimen, in the steel-blue colour of the upper parts, assimilates to the European species, but differs from it strikingly in its smaller size, in its much less emarginate tail, in its deep-brown axillaries, and in having the whole of the upper tail-coverts pure white instead of steel-black at the tips. Its breast, moreover, shows no sign of the partial brown band of the House-Martin. Now, strange enough Capt. Blakiston has brought from Hakodadi, Japan, another Martin, which, on the other hand, resembles *C. cashmiriensis* in its proportions, in the colour of the back, and in the almost even tail, but differs from it in having a black chin, black instead of brown axillaries, and in having the ends of the lower tail-coverts broadly tipped with black. Capt. Blakiston assures me that his specimen is a mature male, shot in July."

The species of the genus *Chelidon* will therefore now stand as follows :—

(1.) *C. urbica,* L.
Hab. In Europa.

(2.) *C. cashmiriensis,* Gould.
Minor præcedente : cauda breviore, subfurcata ; partibus superioribus atris, vix purpureo-splendentibus : axillaribus fuscis.
Hab. In Cashmiria.

(3.) *C. blakistoni,* n. sp.
Simillima *C. cashmiriensi,* sed mento, axillaribus et tectricum infracaudalium apicibus atro-fuscis : gula nivea : subtus fuscescens, rachidibus plumarum multarum, præsertim crissi et etiam uropygii, fuscis.
Hab. In Japoniæ ins. Yesso.

(4.) *C. lagopoda*, Pallas.

Similis *C. urbicæ*, sed minor, subtus nivea: cauda minus furcata: axillaribus saturate fuscis: tectricibus supracaudalibus niveis, rachidibus plumarum tenuissime fuscis.

Hab. In Siberia (Pallas); in China boreali (Fleming).

Before the Zoological Society I pointed out the undoubted distinctness of Mr. Whiteley's bird, from Peking, from the European bird, and proposed to name it after that gentleman. But I find, on reference to Pallas's 'Zoographia Rosso-Asiatica' (vol. i. p. 534), that the Martin therein described, from Siberia, under the above name, and referred by Pallas himself, and since then by Middendorff * and von Schrenck †, to *C. urbica* of Linnæus, answers in every respect to the bird from Peking, and by no means tallies with the European House-Martin. I feel therefore bound to lay aside my name, and to apply to it the older denomination given to it by Pallas, which has hitherto been considered synonymous with *C. urbica*.

18. WARBLER.

The bird observed by me was probably the same as one in Mr. Fleming's collection, which is identical with Mr. Blyth's *Arundinax olivaceus*. This again answers to *Salicaria aëdon*, Pallas, as figured in v. Schrenck's Amur-Reise, i. pl. 12. There is also in this series a specimen of *Salicaria cantillans*, Schlegel.

19. GRASSHOPPER-LARK.

This must have been *Locustella ochotensis* (*Sylvia ochotensis*, Midd. Reise, p. 185, pl. 16. figs. 7. 8), described from Siberia. Capt. Blakiston's Hakodadi series contains one of this bird.

22. BLUE-THROATED WARBLER.

Mr. Fleming has brought from Peking two skins of this bird, both of which have the red spot on the breast, in place of the white spot, and are therefore referable to *Cyanecula cærulecula* (Pallas).

24. BLUE-TAIL.

Our specimens of this bird agree with Japanese examples, which differ from *Ianthia rufilata*, Hodgson, of the Himalayas, in having a white eyebrow-mark where the latter has only a bright blue one, and in being more dingy on the upper parts.

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* Sib. Reise, p. 189.

† Amur-Reise, p. 388.

The Siberian specimens in the British Museum, marked *cyanura*, again differ from both in having a rufescent eye-streak, and in having the throat and breast reddish buff-colour instead of white. Ours will stand as true *Ianthia cyanura* (Schleg.) of the 'Fauna Japonica.'

To the Robin-Warblers I can now add a South-China bird lately procured from Peking, which I described in 'The Ibis,' vol. iii. p. 262. My description, however, was from a bird not fully matured; I mean the *Larvivora gracilis*, Swinhoe. This species much resembles *L. cyanea* of Northern India in form, and a good deal in colouring; but its wings are shorter and its bill longer. *L. cyanea* has the lower neck, breast, and flanks a fine reddish buff, instead of pure white as in our species,—its chin and two streaks proceeding from it only being white. It also has a narrow white eye-streak, which is wanting in our species. As I have before described only the immature bird, I will now add a short note of the peculiar features of the adult male:—

LARVIVORA GRACILIS, mihi.

Supra cyanea: subtus nivea: linea a rictu colli latera utrinque ad ulnam descendente nigra: remigibus fuscis: rostro nigro: cruribus pedibusque pallide carneis.

27. RIBBON-TAILED FLYCATCHER.

From the skins brought home by Mr. Fleming, this appears to be *Tchitrea incei*, Gould, which differs from *T. affinis*, of Malacca, in having a much smaller bill.

30. PIED-TAIL FLYCATCHER.

This is the *Muscicapa leucura* of Gmelin and the *M. albicilla* of Pallas. Our skins of this bird agree with those from India; but I have not been able to compare them with specimens of the *Erythrosterna parva* of Europe, as there are none of the latter in the British Museum.

To the Flycatchers I can now add

Xanthopygia leucophrys, Blyth, of India.

Strange that this species should occur in the north, and not the ordinary *X. narcissina* of Japan.

Niltava cyanomelæna (Schleg.), *Muscicapa cyanomelæna* of the Faun. Japon.

33. Brown Wren. *Phylloscopus fuscatus,* Hodgson.

This is identical with skins in the British Museum from Siberia, marked *Sylvia sibirica,* Pallas.

34. Crowned Wren. *Phylloscopus coronatus* (Schlegel).

All doubt about this species is at an end, as Mr. Fleming has brought specimens of it from Peking.

39. Pale Redwing.

Should be *Turdus pallens,* Pallas (*T. obscurus,* Gmelin). *T. pallidus* of Gmelin is the *T. daulias* of the 'Fauna Japonica.'

40. Red-tailed Fieldfare.

This is, I find, the winter plumage of *Turdus ruficollis,* Pallas.

To these Thrushes we may add, from Peking,
Turdus sibiricus, Pall.,
T. fuscatus, Pall., and
Petrocincla manilensis, Gmelin.

41. Monticola ——?

This Thrush has turned out, as I surmised, a new species. In my note, p. 332, I observe "abundant" has been misprinted for "aberrant." Our species is rather a tree-bird than a rock-bird, like the Himalayan species *cinclorhynchus,* to which it is closely affine, and which has rightly enough been made the type of another genus, *Orœcetes.* The bird I procured was not quite mature; but Mr. Fleming's specimen (a fine adult male) afforded me an opportunity of describing it at the meeting of the Zoological Society. Our species is smaller in size, and has a shorter and more robust bill, than *O. cinclorhynchus,* which is at once distinguishable from ours by its throat and neck being blue-grey like the crown, by the blue edging of its wings and tail, and by its having the white that adorns the wing extending over the six inner tertiary quills instead of only over the second and third consecutive feathers.

Orœcetes gularis, n. sp. (Plate III.)

Crown of the head, extending down the back of the neck, and carpal region of the wings clear French or lazuline grey. Loral space, sides of the neck, under parts, rump, and upper tail-coverts deep reddish buff. Auriculars, onwards to the back, back, scapulars, and lesser wing-coverts black. Wings and tail hair-brown, with a surface-wash of pale grey, chiefly conspicuous on the basal half of the latter; the feathers of the wing edged with pale buff, the greater coverts and tertials being strongly tipped with the same. A white spot, comprising the basal portions of the outer webs of the 2nd, 3rd, 4th, and 5th tertiaries, ornaments the wing. The singularly distinctive character whence I have taken its name consists in a white line, which, starting from the centre of the chin, runs down in front quite to the breast, broadening as it descends to the form of an isosceles triangle, a line of black spots edging for some distance the rufous that flanks its sides. Bill blackish brown, with bright yellow rictus inside the mouth. Legs and claws brown, strongly washed with ochre. Iris deep brown.

Total length 7 inches; wing 4; tail $2\frac{8}{10}$.

43. PIED WAGTAIL.

Under this head we may note my species, *Motacilla ocularis*, a specimen of which, in full summer plumage, with grey back, is comprised in Mr. Whiteley's series. This bird resembles *M. lugubris*, though more delicately formed; but is always distinguishable by the carpal region being grey instead of black, and in its summer plumage by its grey back. There is, moreover, less white on the wing. Mr. Blyth identified my bird with *M. dukhunensis*, Sykes; but as I have taken the trouble to examine this species in the East Indian Museum, I can confidently assert that *M. dukhunensis* is one of the *M. alba* group, and not one of the White-winged group so conspicuous for the black line through their eyes.

45. YELLOW QUAKETAIL.

The specimens of this bird brought by Mr. Fleming agree with *Budytes cinereocapilla* of Europe, the wing-coverts only being a little more distinctly tipped with yellow.

46. WOOD WAGTAIL.

This is the true *Nemoricola indica*, Gmelin, as Mr. Whiteley's specimens testify.

51. JAPANESE LARK.

Our two specimens of the Peking Lark do not agree with the

Japanese bird in Capt. Blakiston's collection, which seems to be a true Woodlark. Ours are of the size and form of *Alauda arvensis*, L., but paler, without any sign of the greenish yellow with which English Larks are tinged in winter. Though both males, they have moreover no appearance of crests. I am inclined to think that they will turn out to be distinct; but for the present I will follow the Russian ornithologists in classing the Peking species with the British bird.

To the Larks I must now add a Shore-lark identical with *Otocorys penicillata* of Gould.

59. The Ruddy Hammer is *Emberiza pithyornis* of Pallas (Zoogr. Rosso-Asiat. ii. p. 37).

To the Buntings I must add a bird, procured by Mr. Fleming, allied to *Emberiza cioides*, which answers entirely to a new species from Kumaon, described by Mr. Moore as *E. stracheyi*. In full plumage these birds are at once distinguishable by their black heads and chin, marked with a stripe of white over the crown, another along the eyebrow, and a third from the lower mandible to the nape.

Among the Finches Mr. Whiteley has one I have not noted, the *Carpodacus erythrinus*, Meyer.

72. Black Crow.

This has wrongly been set down as *Corvus japonicus*. It is rather the Chinese representative of *C. corone*, L., which Mr. Gould has designated *C. sinensis*. I have since seen *C. japonicus* in Capt. Blakiston's collection, from Japan. It has a strong bill, like a Raven.

To the Crow group I may add a Chough. The only specimen of this bird in Mr. Fleming's collection is immature, and has clipped wings. It will probably turn out to be the true *Fregilus graculus*, L., which, as I see from the East Indian Museum, also occurs in Java.

78. Red-cheeked Starling.

This was wrongly referred to *Sturnus pyrrhogenys*. Mr. Fleming's bird is doubtless *S. daüricus*, Pall., which also occurs in India and Java.

80. Green Woodpecker, Temm. *Gecinus canus.*

Capt. Blakiston has, from the Yangtsee River, a smaller species, with black hind neck, referable to *G. guerinii*, Malherbe.

81. Large Pied Woodpecker.

This differs from all the four southern forms described by M. Malherbe. It has the tail of *Picus luciani*, and the body of *P. cabanisi.* All I can at present say of it is, that it is one of the difficult *P. major* group, which seem to vary too much in the same locality to admit of splitting into numerous species. I will endeavour to work out my series from various parts of China, with the help of M. Malherbe, and hope to be able to publish the results at some future date.

82. Pied Woodpecker.

This is a wonderfully close representative of *Picus hyperythrus*, Vigors, of the Himalayas,—too close, indeed, for me to attempt to separate it. It has, however, less red on the sides of the neck than usually occurs in the specimens I have seen from the Himalayas, and the back appears to be more banded.

83. Small Pied Woodpecker.

This species is evidently distinct from any of those figured in M. Malherbe's Monograph of the *Picidæ.* It is one of the black spark-headed group allied to *P. mitchelli*, but differs from all in having the cheek and moustache-streaks brownish grey instead of black. For this species I now propose the name

Picus scintilliceps, n. sp.

Affinis *P. mitchelli*; sed strigis auricularibus mystacibusque griseo-fuscis: capitis vertice cano: naribus strigaque oculari albis: subtus fusco-ochraceus, nigro longitudinaliter striatus: supra maculis fasciisque albis latioribus: occipite nigro; in maribus solum utrinque flammeo ornato. Long. tota 6, alæ 4, caudæ 2·1, poll. et dec. Brit.

84. Mr. Fleming's collection contains a specimen of the veritable English Cuckoo, *Cuculus canorus*, L.

To the Drongo Shrikes I have to add that curious bird, *Chibia hottentota*, L., of the plains of India, which I lately noted from Amoy. This has since been procured at Peking.

106. Snippit. *Tringa* —— ?

This turns out to be the true *Tringa pectoralis.* I have also procured it at Amoy.

109. Lesser Snippit.

This bird appears to be *Tringa subminuta* of Middendorff (Sibir. Reise, ii. p. 22).

To the Snippits we may add the Common Dunlin, which is also abundant, *Tringa alpina.*

Among the Sandpipers must be included *Totanus fuscus* and *Terekia javanica.*

121. Curlew.

My specimens I did not carefully examine at the time. I find now that they have no white on their rumps. They were young birds, and therefore hard to identify; but I am strongly of opinion that they are to be referred to *Numenius australis,* Gould, of Australia, already noticed by v. Schrenck as occurring in Amoorland (Amur-Reise, i. p. 426).

To this group we must also add the Bar-tailed Godwit, *Limosa lapponica,* from Peking.

Among the Herons, Mr. Fleming has brought away *Ardetta sinensis.*

Mr. Fleming's collection also comprises a Rail and a Crake, respectively identical with the species found in India—*Rallus indicus,* Blyth, and *Porzana bailloni* (Vieill.).

159. Javan Tern.

Sterna javanica, Horsf., I find is not a true *Sterna* after all. Our bird appears to be the true *Hydrochelidon nigra,* L.

In conclusion, I have to record my best thanks to Mr. Whiteley for permitting me to examine and take notes from his series of Peking birds before they were distributed.

VIII.—*Corrections and Additions to* Captain Blakiston's *Paper "On the Ornithology of Northern Japan"* (vol. iv. No. 16. p. 309).

Since the publication of my paper in the last Number of 'The Ibis,' Mr. Robert Swinhoe has arrived in this country with a large part of his extensive collection of Chinese birds, and with a great stock of knowledge on the subject. He has kindly examined the specimens on which my list was founded, and the result is that I have to acknowledge certain errors in it, consequent on a very limited knowledge of oriental ornithology. At the same time, however, I am glad to be able to introduce some more species of birds to the fauna of Northern Japan.

Following the order of the list at—

Page 314. The paragraph on *Buteo japonicus* (which name crept in on account of one of my Chinese specimens being of that species) refers to *Circus æruginosus*, the Marsh Harrier of Europe. The specimen, which is from Hakodadi, Mr. J. H. Gurney considers to be an adult female, having the light markings on the secondaries, the feathers of the throat, and upper part of the breast, paler than is usual. Thus at p. 316, the note concerning Harriers must be taken as referring to other species, and will read as it should be, if the words "and some," in line 11, are struck out.

P. 316. *Hirundo urbica* must be omitted. The specimen referred to, shot in July (not March), on close comparison, is found to differ in having the whole upper parts reflecting purple, in place of blue-green; the chin, close to the bill, sooty; the under-wing plumes dusky, in place of white; and in the shafts of the breast, belly, and rump feathers being brown, and showing as thin longitudinal streaks on the white. It seems to agree very nearly with Mr. Gould's specimen of *Chelidon cashmiriensis*, described by him from that country (P. Z. S. 1858, p. 356). A Martin, from Northern China, comes between this and *H. urbica* of Europe*.

P. 318. *Locustella ochotensis* (Middend.), as identified by Mr. Swinhoe, must stand in place of *Calamoherpe cantillans*.

P. 319. With regard to the Thrushes, I must reduce my specimens of *Turdus cardis* by two, which Mr. Swinhoe considers to be the young of *Turdus sibiricus*, Pallas. These were shot by myself, from among a number, in a small pine-wood near Hakodadi, in August. The most striking features which distinguish the young of this species from that of *T. cardis* are the light-coloured streaks in the middle of the feathers of the head, back, and wing-coverts. The young are subject to as great variations in the general colour of the plumage as those of *T. cardis,*—my two specimens, which are both young males, differing, if anything, rather more than the two young given in pl. 29 of the 'Fauna Japonica.'

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* Capt. Blakiston's Japanese Martin has since been named by Mr. Swinhoe *Chelidon blakistoni* (see p. 90 of this Number).—Ed.

P. 321. For *Parus rubidus* read *Parus varius.*

P. 322. *Sitta roseilia* agrees exactly with a specimen in the possession of Mr. Gould, from Archangel, which he considers to be *S. uralensis,* Licht.

P. 327. On comparison with specimens in Mr. Swinhoe's collection, the Finch inserted as *Ligurinus sinicus* turns out to be the larger of the two species, namely *Ligurinus kawarahiba,* figured in pl. 48 of the 'Fauna Japonica.'

P. 328. Among the Buntings, one was left blank in my paper. I now propose to fill this space with the name *Emberiza minor,* as the specimen—an adult male, shot by myself, in long grass, near Hakodadi, on the island of Yesso, on the 3rd of September, 1861—seems referable, according to Mr. Swinhoe, to the *Emberiza schœniclus minor* noted by Middendorff, Sib. Reise, p. 144. Owing to its plumage being much worn, the following unscientific description is all I can give of it:—Length 5·7 in.; wing 2·3 in. Bill rather elongated, and sharp at the point, of a dark horn-colour; eye brown; feet, when fresh, reddish brown; entire head and throat very dark brown—nearly black; back portion and sides of the neck grey, tinged with chestnut; back and wing-coverts mixed grey, dark brown, and bay; wing-feathers dull brown, having the inner edges white, except towards the ends of the primaries; tail somewhat rounded, of a dark brown, with nearly half the outer pair of feathers white, and a small longitudinal mark at the end of the second pair. The primaries are nearly of one length, the second, third, and fourth being rather the longest, but they reach little beyond the secondaries. Whole under parts light brownish grey, below the black throat, which reaches three-quarters of an inch from the bill.

P. 329. *Turtur rupicola* should have been in *italics,* as I did not preserve a specimen of it.

P. 330. For *Charadrius mongolicus* read *Charadrius longipes*,—the true *Charadrius mongolicus* of Pallas being a *Hiaticula*—the same as *H. ruficollis*, Blyth, of India, according to Mr. Swinhoe.

P. 331. The Snipe included in my list has been compared with specimens of *Gallinago solitaria* of Hodgson, but it certainly is not of that species, being entirely devoid of the white patches on the back and wings, and of a generally lighter colour. It seems to agree with Mr. Gould's *G. australis*, the only differences being its slightly inferior size and more reddish hue. The sex of my specimen is doubtful; its length is 12·3 in., that of the wing 5·8 in. I may remark, that the figure in the 'Fauna Japonica' (pl. 68) looks like an imperfect copy of *G. solitaria*, and may (though it would not be fair to assume such as the case) have been taken from a specimen not killed in Japan.

P. 331. *Podiceps auritus* should stand as *Podiceps philippensis*, being identical with Chinese specimens of that species.

In conclusion, I must express my thanks to Dr. Sclater, Mr. J. H. Gurney, Mr. G. R. Gray, Mr. Gould, and Mr. Swinhoe, for the assistance they have so readily afforded me.

THOS. BLAKISTON.

London, Nov. 30, 1862.

IX.—*Note on* Corvus senex, *Garn. & Less.*, *and* Corvus fuscicapillus, *G. R. Gray*. By ALFRED R. WALLACE, F.Z.S.

ON looking over Schlegel's 'Notice sur le genre *Corvus*,' and comparing his figures and descriptions with my specimens from the Malay Archipelago, I was surprised to find that his *Corvus senex* was not Lesson's species, but a quite different bird, obtained by me at the Aru Islands, which Mr. G. R. Gray inserted in his list (Proc. Zool. Soc. 1858) as *C. orru*, but afterwards (on receiving the true *C. orru* from Dorey) named *C. fuscicapillus*. Schlegel's specimen appears to have been an immature female. It agrees exactly with mine in the high-arched bill, which is very much compressed, and in all the principal dimensions; but the adult birds have the plumage in both sexes purple-black, glossy above, except the head and neck, which are of a deep sooty brown. The face is thickly plumed; but in a young specimen which I possess, the feathers are, as Schlegel describes it, "très-clair semées." The bill, in the male, is entirely black; in the female and young birds, reddish white, with a black tip. The feet, in both sexes, are black.

The true *Corvus senex* is a very different bird. The bill and feet are yellowish white in both sexes, and a large space round the eye quite bare and of a white colour. The bill resembles in form that of *C. ossifragus,* figured by Schlegel, but is more elongated, and the upper mandible extends a quarter of an inch beyond the lower one; the base of the lower mandible is wider than in the much longer bill of *C. fuscicapillus.* The hairy plumes which cover the nostrils spread upwards, so as to rise and almost meet above the culmen at more than half an inch from its base, whereas in most other species of *Corvus* (and in *C. fuscicapillus* in particular) they are depressed over the nostrils only, leaving the culmen, except at its base, perfectly free. But the most characteristic feature of *C. senex* is its long graduated tail, which differs from that of every other Crow: Lesson gives it as from nine to ten inches in length, which exactly agrees with my specimens. In the colour of *C. senex* there is much individual variation, and though most frequently the head is of a dull dirty white, and the rest of the body dusky, yet I have one specimen in which the wings and tail show purple glosses, and I should not be surprised if others had the full corvine hues.

In the following comparative dimensions of the two birds, it will be seen that those of Schlegel's specimens, allowing for the French inches ($\frac{1}{12}$th more than English), exactly agree with my own.

	Total length.	Wings.	Tail.	Bill, from base of culmen.	Height of do.
C. senex, Less. . .	23 in.	13 in.	9–10 in.	$2\frac{1}{2}$ in.	1 in.
C. fuscicapillus . .	21–23	13–$13\frac{1}{2}$	7	$2\frac{9}{10}$	$1\frac{1}{8}$
(*C. senex,* Schlegel)	20	$12\frac{7}{12}$	$6\frac{1}{2}$	$2\frac{2}{3}$	1

The synonyms and references to *C. fuscicapillus* will therefore stand thus:—

CORVUS FUSCICAPILLUS.

Corvus orru, G. R. Gray, Proc. Zool. Soc. 1858, p. 180.

Corvus senex, Schlegel, 'Notice sur le genre *Corvus*,' 1860, p. 10 (♀ juv.).

Corvus fuscicapillus, G. R. Gray, Proc. Zool. Soc. 1861, in Table of New Guinea Birds.

Hab. Aru Islands and Waigiou.

British Museum, Coll. Wallace, and Mus. Leyden.

X.—*Recent Ornithological Publications.*

1. ENGLISH PUBLICATIONS.

THE appearance of the two first parts of Mr. Gould's 'Birds of Great Britain'* is certainly the most remarkable event that has taken place in the ornithological world since we last addressed our readers. Our brother-naturalists are, no doubt, well acquainted with the previously issued volumes of Mr. Gould's magnificent series. They must be aware, therefore, that there is at present no series of illustrations of the birds of our native country which at all equals in merit those which Mr. Gould has given to the world of the Humming-Birds, the Toucans, the Birds of Australia, and the Birds of Asia. It is true that Mr. Gould has already some years ago published a work on the Birds of Europe, the plates of which form the usual standard of reference by English naturalists when treating of the European Avi-fauna. But, in the first place, the 'Birds of Europe' is long since out of print, and copies of it can only be obtained second-hand and at irregular intervals. And, secondly, the science of ornithology has made such rapid advances of late years, as, were the 'Birds of Europe' still accessible, would nevertheless necessitate the reissue of the work. We think, however, that Mr. Gould has acted wisely in confining himself on this occasion to the feathered tribes of our native islands. By so doing he keeps his work within narrower limits, and is enabled to issue it in a shorter period of time and at a less cost. And, besides this, he renders it more attractive to the many field-naturalists that are scattered over the broad surface of our fair mother-land, who will gladly welcome a series of pictures of the familiar favourites of their farms and fields, but would not care to bestow similar favours upon figures of the inhabitants of distant parts of the Continent. When the large capital invested in the production of Mr. Gould's work is considered, and its great importance in extending the national taste for natural history is fully estimated, it must be obvious that the author is bound, not only in justice to himself, but also in the interests of science, to use every legitimate method of extending its circulation in this country.

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* The Birds of Great Britain. By J. Gould, F.R.S., &c. Parts I. and II., fol. London, October 1, 1862.

Mr. Gould has, we believe, as yet issued no prospectus of his 'Birds of Great Britain,' but we understand he intends to publish two parts every year, at the price of three guineas a part, and that he hopes to be able to bring the whole work to a conclusion in about eight or nine years. Each part contains fifteen plates, with the accompanying letter-press. In our notice of the expected appearance of the work appended to our last Number, we stated that Mr. Gould was devoting more than usual care and attention to the production of these illustrations. We think it will be allowed by all who are acquainted with the general character of illustrations to works on natural history that, in his 'Birds of Great Britain,' Mr. Gould has not only surpassed others, but, with the assistance of his fellow-artists, Messrs. Wolf and Richter, in some of the portraits of our familiar species of birds given in his two first numbers, has fairly surpassed himself. Those who can afford to spend a small annual sum for the next eight or nine years in acquiring a work which must, as regards illustrations, inevitably become and remain for many years the standard of reference of all British ornithologists, cannot do better than subscribe to Mr. Gould's 'Birds of Great Britain.'

2. French Publications.

M. L. Maillard's recently issued work upon Réunion*, as the French now term the Island of Bourbon, contains some details on the ornithology of that island, which it is interesting to be able to compare with what we know of the Avi-faunas of Mauritius and Madagascar. The following thirty-six species are enumerated by M. Maillard as being found in the island.

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* Notes sur l'île de la Réunion (Bourbon). Par L. Maillard: Paris, 1862. 8vo.

Falco radama?
Circus maillardi.
Poliopsitta cana.
Coracopsis vaza.
Collocalia esculenta.
Phedina borbonica.
Fregilupus capensis.
Acridotheres tristis.
Muscipeta borbonica.
Hypsipetes olivaceus.
Oxynotus ferrugineus.
Pratincola sibylla.
Zosterops borbonica.
—— hæsitata.
Munia oryzivora.
Maja punctularia.
Estrelda astrild.
—— amandava.
Foudia madagascariensis.
Chlorospiza chloris.
Passer domesticus.
Serinus icterus.
Columba schimperi.
Turtur picturatus.
Geopelia striata.
Margaroperdix striata.
Excalfactoria chinensis.
Francolinus perlatus.
Herodias calceolata.
Gallinula chloropus.
Pterodroma aterrima.
Puffinus obscurus.
Anoüs tenuirostris.
Phaëthon candidus.
Numenius phæopus.
Pelidna cinclus.

Some of them, if correctly determined, are, of course, introduced species; and it would have been very interesting if M. Maillard had given us details of the manner and date of their importation into the island. An appendix to the work contains some valuable criticisms on the list, from the pen of M. Jules Verreaux, to which we invite the attention of those who are interested in the natural history of these regions.

3. Dutch Publications.

The fifth volume of the 'Acta Societatis Scientiarum Indo-Neerlandicæ' (which, though bearing on its title-page the date 1858–59, has, we believe, been only recently received in Europe) contains an article by Mr. von Rosenberg, on the distribution of some of the characteristic groups of birds of those regions*. Mr. v. Rosenberg's tables include the genera *Eurylaimus, Pitta, Melliphaga, Nectarinia, Merops, Buceros, Alcedo,* and *Bucco,* and are intended to show the extent of the prevalence of these forms in Java, Sumatra, Borneo, Celebes, the Sunda Islands, the Moluccas, and New Guinea. They are of some interest as far as they go, though obviously compiled from different sources, and not very perfectly worked out. Mr. Wallace, we believe, as soon as he has had time to arrange his notes and collections, will be able to furnish us with much more complete and more reliable information on the ornithology of this part of the world. A somewhat similar article by Mr. von Rosenberg appeared in the 'Journal für Ornithologie' for the past year*, relating to the distribution of the *Psittacidæ* in the Indian Archipelago. We noticed, with some regret, that a considerable part of this latter article had been borrowed from a paper which appeared in the 'Proceedings of the Zoological Society' for 1860†, without any sort of acknowledgment. It does not appear that Mr. von Rosenberg is sufficiently explicit in stating what facts he gives on his own personal observation, and what he adopts from other authorities.

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* Overzigtstabellen voor de Ornithologie van den Indischen Archipel, and Verbeteringen en Bijvoegsels tot de Overzigtstabellen voor de Ornithologie van den Indischen Archipel. Act. Soc. Indo-Neerl. vol. v.

Dr. H. Schlegel, who, since his accession to full command of the National Zoological Museum of Holland, at Leyden, has been busily engaged in rearranging the treasures of this noble establishment, has just commenced a work intended to be devoted to the exposition of its contents‡. The first part now issued relates to the collection of birds, which, as is generally known, is one of the largest and finest in existence, particularly as regards the ornithology of the Eastern Archipelago. The plan adopted is excellent, consisting in giving a series of monographic sketches of the different groups, in the form of a catalogue of the specimens of each species in the collection, accompanied with notes and observations on the species where these seem to be necessary, and exact indications of the habitat and of the collector of each specimen. The number of scientific writers who have taken descriptions from the types of the Leyden collection is well known to be considerable. Le Vaillant, Temminck, Kuhl, G. Cuvier, Valenciennes, Bonaparte, Boié, S. Müller, and Hartlaub are those mentioned by Dr. Schlegel, to whom we may add—last, but not least—Dr. Schlegel himself. The Leyden collection is likewise remarkable for the number of specimens it contains which have been obtained by the travelling naturalists employed by the Dutch Government in their Indian possessions and the neighbouring islands, and of which the exact localities (so often wanting in most other collections) have been carefully preserved. These two points greatly increase the value of Dr. Schlegel's work, particularly as regards the additions it is likely to make to our knowledge of the geographical distribution of species.

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* Journ. für Orn. 1861, p. 59.

† "On the species of the genus *Prioniturus*, and on the Distribution of the *Psittacidæ* in the Indian Archipelago." By P. L. Sclater, P.Z.S. 1860, p. 223.

‡ Muséum d'Histoire Naturelle des Pays-Bas. Revue Méthodique et Critique des Collections déposées dans cet établissement. Leyde, 1862: pt. 1.

Dr. Schlegel commences his catalogue with the genus *Buceros,* and then passes on to the Accipitres, of which he successively handles what he terms the *Falcones, Aquilæ, Astures, Asturinæ,* and *Buteones.* We cannot be expected to agree entirely with Dr. Schlegel in certain well-known points, in which he holds views certainly not in accordance with those of the great body of modern naturalists. With respect to his reduction of representative species into what he now calls "*conspecies,*" with three names to each, we shall only remark that we fear it is impossible in many cases to draw the line between species and conspecies, and that this method only removes the great question "what is a species?" to another spot, instead of solving it. Neither can we be expected to agree with Dr. Schlegel's somewhat exaggerated extension of generic groups. It may be very true that matters have been pushed to rather an extreme in the opposite direction of late years. But if *Serpentarius* and *Thrasaëtus* be united to *Astur, Gypaëtus* to *Haliaëtus,* and *Polyboroides* to *Nisus,* we shall be compelled to alter our whole system of modern nomenclature, and if uniformity is requisite, to cast, in some cases, hundreds of species into the same genera. We cannot accede to so great a retrogression. But these and some other minor points which seem open to criticism, such as Dr. Schlegel's adoption of antiquated pre-Linnean names in some instances, do not detract from the value of the work, which is absolutely indispensable to the ornithologist, and promises to make very great additions to our knowledge of the groups of which it treats.

4. RUSSIAN PUBLICATIONS.

The lately issued Bulletins of the Imperial Academy of Sciences of St. Petersburg contain some communications by Dr. L. von Schrenck on the most recent discoveries of the well-known botanical traveller, Maximovicz, in Eastern Asia. The first of these relates to Herr Maximovicz's collections and observations made whilst on the river Ussuri, in Southern Amoorland*.

Skins of *Tetrao tetrix*, from the Ussuri, show no appreciable difference from European examples. A new species to the Fauna of Amoorland has been obtained in the beautiful Cedar-bird, *Bombycilla phœnicoptera*, hitherto only known as coming from Japan. A single female specimen of this bird, shot by Herr Maximovicz on the Ussuri, in the month of April, agrees well with Japanese examples. Besides these species specially adverted to, Dr. L. von Schrenck gives a list of between thirty and forty other birds, collected by Herr Maximovicz at the Russian post, Bussewa, on the Ussuri (45½° N. L.), where that energetic collector passed the spring of 1860.

The following numbers of the same publication contain a long and interesting letter † from Herr Maximovicz to Dr. von Schrenck, giving his personal narrative of adventures on the Ssungari, or Ussuri, with a few zoological and botanical notices interspersed.

5. AMERICAN PUBLICATIONS.

Mr. Coues continues his labours on American ornithology in the 'Proceedings of the Academy of Natural Sciences of Philadelphia.' The groups now selected are worked out in the same careful method as has been previously employed by Mr. Coues in his "Monograph of the genus *Ægiothus*." The first of Mr. Coues's papers is a "Synopsis of the North American forms of the *Colymbidæ* and *Podicipidæ*." Of the former family five species of the genus *Colymbus* are recognized as American, that is, our three familiar Divers of these shores, and two representative species, *Colymbus adamsi*, allied to *C. glacialis* (as we must persist in calling the Great Northern Diver, for we cannot allow anything to displace a Linnean name), and *C. pacificus*, an American form of *C. arcticus*. It is with great pleasure we see that fine bird, *Colymbus adamsi*, so fully confirmed as a valid species; for some doubts* have been cast on its distinctness from *C. glacialis*. Mr. Coues thinks there cannot be the slightest doubt upon this point. "The difference in the size, shape, and colour of the bill alone would separate the two, were there no other characters involved." The Smithsonian collection embraces a large series of Adams's Diver, obtained in the vicinity of Great Slave Lake and Mackenzie's River by those energetic collectors, R. Kennicott and B. R. Ross. The Grebes of America are arranged by Mr. Coues under nine specific heads. First, we have two species of the new genus *Æchmophorus* (founded on *Podiceps occidentalis*, Lawrence), both from the Pacific coast of America. Next follow five species of true *Podiceps* and its various subdivisions. These are

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* Zoologische Nachrichten vom Ussuri und von der Südküste der Mandshurei, nach Sammlungen und brieflichen Mittheilungen des Herrn Maximovicz, zusammengestellt von Dr. Leop. v. Schrenck. Bull. Ac. Imp. Sc. St. Pétersbourg, iv. p. 180.

† Nachrichten vom Ssungari-Fluss, &c. Bull. Ac. Imp. Sc. St. Pétersbourg, iv. p. 224.

P. cristatus,	corresponding with the European	P. cristatus.
P. cooperi,		
P. cornutus,		P. cornutus.
P. californicus,		P. auritus.
P. holbölli,		P. griseigena.

Finally, we have a single *Sylbeocyclus* (*S. dominicus* of the Antilles and Mexico), which occurs on the southern confines of the United States, and the *Podilymbus podiceps*, sole representative of the distinct subfamily *Podilymbinæ*.

Mr. Coues's second contribution to ornithology which we have to notice is a "Revision of the Gulls of North America, based upon specimens in the Museum of the Smithsonian Institution." This is an "abstract of a more extended monograph of the

* See P. Z. S. 1859, p. 206.

Gulls of North America," which Mr. Coues has prepared for publication in a Government Report. We are glad to hear that this monograph will be illustrated by figures of the bills of all the species, and coloured drawings of the primary quills, showing the outline and extent of their markings; for such illustrations cannot fail to be of the greatest assistance towards the correct discrimination of the species of this difficult group. Mr. Coues seems to us in some cases to push rather to an extreme the separation of the representatives of the same specific types in the northern portions of the two hemispheres. The question is, in all such cases, Is it possible in a large series of specimens to separate those of the one region from those of the other, without a previous knowledge of the localities? The doctrine of the difference of the species of distinct zoological regions has now been carried to such an extent, that it is too frequently assumed that species are different because they *ought* to be different, and because previous writers, who perhaps have only taken the trouble to compare single specimens from each locality, have considered them different, and assigned different names to them. But it seems manifest that no representative species ought to be recognized unless it can be clearly shown that it presents differences (however minute these may be) which render it invariably recognizable without a previous knowledge of its origin.

We will defer further remarks on Mr. Coues's arrangement of the *Larinæ* until the more perfect work is produced, and content ourselves for the present by stating that the species recognized as North American amount to no less than twenty-five in number, of which sixteen belong to the more typical section containing the genus *Larus* and its allies, and nine to the *Xemine* or hooded group, in which the head usually grows black in the breeding-season.

From Mr. D. G. Elliott's "Remarks on the species composing the genus *Pediæcetes* *, Baird," given in a subsequent page (p. 482) of the 'Proceedings,' it would seem that the supposed new Sharp-tailed Grouse from Arctic America, described by Dr. Suckley in 1861 as *P. kennicottii,* is the true *Tetrao phasianella* of Linnæus, and must consequently bear the specific name originally imposed upon it by the illustrious Swede. The Sharp-tailed Grouse of the northern prairies of the United States, from Wisconsin to Oregon and Washington Territories, will in future stand as *P. columbianus,* being the *Phasianus columbianus* of Ord, in Guthrie's Geography. The two forms appear to be easily distinguishable.

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* This name is commonly written *Pediocœtes*. But if, as we presume, the derivation is *πεδίον*, *campus*, and *οἰκητὴς*, *habitans*, it ought to be spelt *Pediæcetes*.

We are indebted to Mr. Lawrence for early copies of two recent ornithological papers which he has contributed to the 'Annals of the Lyceum of Natural History of New York.' In the first of these the author characterizes six new species of birds,—a Cuban Plover (*Ægialitis tenuirostris*) allied to *Æ. melodus,* four Humming-birds, and a Brazilian Night-jar (*Stenopsis maculicaudus*). Two of the Humming-birds (*Thalurania luciæ* and *Chlorostilbon insularis*) are from Tres Marias Islands, on the Pacific coast of Mexico (21° 30′ N. L.). Three other species were obtained by Mr. Xantus (who collected the former also) in the same islands—namely, *Florisuga mellivora, Cyanomyia guatemalensis,* and *Petasophora thalassina.* Mr. Lawrence's second paper is a "third list" of the extensive collections of birds made by Mr. McLeannan on the Isthmus of Panama. There are many descriptions of novelties given, besides notes, corrections, and additions to the former articles on the same subject. A beautiful *Dacnis,* which Mr. Lawrence characterizes as *D. venusta,* has been kindly promised to us for illustration in this Journal; and the Parrot, formerly considered as referable to *Pionus hæmatotis,* is now discovered to be quite different from the Guatemalan bird, the male bearing rather a broad collar of bright scarlet. It is proposed to be called *P. coccineicollaris.* In this and his former papers on the same subject, Mr. Lawrence has done real good service to ornithology; for the Avi-fauna of Panama was previously quite unknown to naturalists.

We have, in a previous Number, noticed some of the ornithological articles in the eighth volume of the 'Proceedings of the

Boston Society of Natural History,' of which we had received early copies. Looking over the perfect volume, which has lately reached us, we find a third paper likely to interest the readers of 'The Ibis,' being some remarks by Dr. H. Bryant, "On some of the Birds that breed in the Gulf of St. Lawrence*." The occasion of these remarks was a trip that Dr. Bryant made to Labrador in the summer of 1860, "for the purpose of procuring specimens of eggs of those sea-birds that breed there, and also to ascertain what changes, if any, had taken place in their economy since Audubon's visit." The whole of Dr. Bryant's paper will amply merit perusal, and, did space permit it, would be well worthy of being reproduced in these pages. As, however, that is not the case, we must content ourselves with stating that notes, more or less copious, are given on *Somateria mollissima, Sula bassana, Phalacrocorax carbo, P. dilophus, Thalassidroma leachii, Larus marinus, L. argentatus, Alca torda, Uria grylle, U. troile, U. ringvia, U. lomvia,* and some others. "Every available spot on the sides of Gannet Rock, not already occupied by Gannets or Kittiwakes, had been taken possession of by the three last-mentioned species of Guillemots and the Razor-billed Auks; their comparative numbers were about three of *U. troile* to two of *U. lomvia* and one of *U. ringvia,* and about one Auk to fifty Guillemots."

XI.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters:—

Akyab, Arracan, August 13, 1862.

Sir,—In No. 7 of 'The Ibis,' for July 1860, p. 297, which I have only now had an opportunity of seeing, occurs a passage on which I beg the favour of your allowing me to say a few words.

In allusion to an "Itinerary" contributed by me to the 5th Number of vol. xxviii. of the Asiatic Society's Journal, you remark that "an appendix to this paper contains descriptions of some birds supposed to be new, procured during the journey; but as all the species have been previously named by Mr. Blyth in his 'Report,' published in the previous Number of the same Journal, it would have been better not to have given Major Tickell's manuscript names, which are merely useless synonyms."

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* Proc. B. S. N. H. viii. p. 65.

I feel very sure you would not have made that remark had you been aware of the particulars of the case; I will therefore furnish you with them.

On my return from the expedition in the Tenasserim hills, described in the "Itinerary," I sent to the Museum, of which Mr. Blyth is curator, a box of birds' skins, containing several species, not "supposed," but "believed" and in fact known to be new; and to each of these hitherto undescribed birds I appended the specific name, which I, as the discoverer and first describer of the birds, had, of course, a right to give. These names were entered in a list sent with the box, and I mentioned to Mr. Blyth that the descriptions of them would shortly follow.

Mr. Blyth, however, at once reported upon the birds to the Society, and named them himself. He certainly wrote to me regarding the propriety of altering some of the trivial names, but not till the deed was done, and my assent or dissent equally unavailing; consequently, when the appendix to my "Itinerary" was published, my names appeared as "useless synonyms."

Without imputing to Mr. Blyth (from whom I have to acknowledge often receiving much assistance and valuable information) a desire to appropriate my discoveries as his own, it is evident that the somewhat hasty publication of his list deprives me of a right which etiquette in these matters has always recognized. It would be better justice in all cases, I think, if the name of the discoverer should always be recorded instead of that of the mere namer. Long-established custom, however, has decided otherwise; but it would be hard indeed if the person who was both discoverer and describer should not have his name attached to his contributions!

I annex a list of the birds to which I lay claim as discovered by myself. Some of these have been named by Mr. Blyth, and must so remain, as I either had no leisure to describe them myself before they reached his hands, or sent them to him under an uncertainty of their being new. To each bird is affixed the date of its discovery.

1. *Ptiloskelos amherstii,* Tickell, March 24, 1859 (supposed by Mr. Blyth to be the young of *Huhua orientalis*).
2. *Pellornium tickelli,* Blyth, February 24, 1859.
3. *Turdinus guttatus,* Tickell, March 2, 1859.
4. *T. brevicaudatus,* Blyth, February 15, 1855.
5. *T. crispifrons,* Blyth, January 8, 1855.
6. *Sibia picata,* Tickell, February 28, 1859. (Syn. *S. melanoleuca,* Blyth.)
7. *Pycnonotus nanus,* Tickell, March 2, 1859. (Syn. *Ixulus striatus,* Blyth.)
8. *Abrornis superciliaris,* Blyth, February 24, 1859.
9. *Buceros tickelli,* Blyth, January 27, 1855.
10. *Garrulax strepitans,* Tickell, November 15, 1855.
11. *G. poliogenys,* Blyth, February 13, 1855.
12. *Pteruthius æralatus,* Tickell, February 14, 1855.
13. *Parus subviridis,* Tickell, February 14, 1855.
14. *Pomatorhinus tickelli,* Blyth, February 14, 1855.
15. *Phylloscopus viridipennis,* Blyth, February 15, 1855.
16. *P. affinis,* Tickell, November 29, 1854.
17. *Hypsipetes tickelli,* Blyth, February 15, 1855.
18. *Arboricola chloropus,* Tickell, February 8, 1859. (Syn. *Tropicoperdix chloropus,* Blyth.)
19. *A. brunneopectus,* Tickell, February 11, 1855.

Our East Indian field-ornithologists appear to occupy a very small space in your delightful periodical. But I hope to be permitted to contribute to its interesting pages, from time to time, the results of over thirty years' research into Indian ornithology.

Yours, &c.,

S. R. Tickell.

Colchester, November 12, 1862.

Sir,—I think all ornithologists are indebted to Lord Lilford for his paper on the Francolin in your last Number.

I was quite aware, as I mentioned in my notice of the bird in my work, that *F. vulgaris* had become a rare bird in Europe.

My words are, "with the exception, however, of Sicily and the Grecian Archipelago, the Francolin is becoming a rare bird in Europe."*

I was not prepared, however, to state that it had become "extinct in Europe," and I will show that I did not stand alone in such opinion. It is true that Malherbe, when he wrote his 'Faune Ornithologique de la Sicile' in 1843, remarked that it was becoming more and more rare in that island. Yet Luigi Benoit, from whom, as Lord Lilford remarks, Malherbe quoted *verbatim*, has recorded that, in 1840, it was so common in Sicily as to fetch only 1 franc and 25 centimes in the market! That it should now be extinct in Sicily is therefore one of the most remarkable and, at the same time, one of the most interesting facts in natural history.

My authorities for the occurrence of the Francolin in Malta and the Grecian Archipelago were Temminck, Schlegel, and Degland. I am assured, however, by Dr. Leith Adams and Mr. Charles Wright that it does not, and they believe never did, exist in Malta. Temminck and Degland both give Turkey as a locality.

Since the publication of Lord Lilford's interesting paper, I have made some further inquiries, the result of which goes far towards confirming his views.

M. de Selys Longchamps writes to me:—

(*Translation.*)

"I have nothing original to say upon the Francolin question. The following are the authorities *pro* and *con*:—

"1. Luigi Benoit (Ornitologia Siciliana, 1840, p. 118). 'Found in the southern parts of Sicily, especially in the plains which extend between Castiglione and Terranova; but it has become more and more rare, owing to unfair sporting. It sells for 1 franc 25 centimes (1 shilling).'

"2. Antonio Schembri (Quadro geografico-ornitologico di Malta, Sicilia, Roma, Toscana, Liguria, Nizza, e la Provincia di Gard: Malta, 1843). 'I have never found the Francolin at Malta. Sedentary at Terra Nova and Castiglione, in Sicily. Now rare in Tuscany. Formerly common there, according to Savi. Accidental during its passage at Nice.'

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* Birds of Europe, vol. iii. p. 237.

"3. Malherbe (Orn. Sic.) gives a copy of L. Benoit, but adds as a locality 'Cyprus.'

"*Negative authorities.*

"1. Not found in the Cyclades (Erhardt, Wirbelthiere der Cyclades).

"2. Not found in Algeria (Loche).

"3. Not in Greece (Mühle).

"4. Not in Corsica (Malherbe).

"5. Not in Sardinia (Gaetano Cara, Orn. di Sardegna).

"6. Not found in Russia (Nordmann, Voyage de Demidoff, 1840). But the same authority adds, 'It does occur on the S. and S.W. coasts of the Black Sea, in European Turkey, and in Asia Minor.'"

M. E. Verreaux writes:—"My brother Jules's opinion agrees with mine, that *Francolinus vulgaris* has become extinct in Europe, and that the specimens scattered about in commerce at this time, and sold as European, come from India, and are of a distinct species, viz. *F. asiæ*, Bp. Formerly, there can be no doubt that the true *F. vulgaris* was found in Sicily, Greece, and Turkey; but I am not aware that a single specimen has been brought from these localities for more than thirty years."

Lord Lilford seems to deny that Cyprus and the Grecian Archipelago are European localities. I think, however, we must retain the Mediterranean islands, at all events, in the Ornis of Europe, whatever geographers may say to the contrary.

Sicily is quite, and Sardinia nearly, as near to Africa as Cyprus is to Asia; and how are we to divide the Archipelago?

Prince Charles Bonaparte, though he considered the Cyprian Francolin distinct from the Sicilian species, having described it as *F. tristriatus* from three bands of white on the side of the head, nevertheless admitted it as a European species both in his 'Tableau parallélique de l'Ordre des Gallinacés' and in his Catalogue, published in 1856, with the additional localities of Crete and Çandia.

The bird which I have figured is, however, the *Francolinus vulgaris*, Stephens, and was obtained by Mr. Tristram in Cyprus.

The wide-spread circulation of 'The Ibis' on the Continent will, I hope, be the means of eliciting further information on this interesting subject.

I am, I confess, unwilling to give up as extinct in Europe a species described by Stephens in 1819 as occupying all the warm parts of Europe, from Spain to the Levant.

C. R. Bree, M.D.

Since the above letter was received, Mr. Bree has forwarded to us the following translation of a letter from Prof. Schlegel:—

"Leyden, Nov. 20, 1862.

"Sir,—I can assure you, in the most conscientious manner, that *Francolinus vulgaris* is found in Europe.

"Our former traveller, M. Cantraine, now Professor in the University of Gard, killed many specimens of this bird in Sicily, of which we have many in the galleries of our Museum. You will find, beside, in the 'Faune Sicile' by M. Malherbe, many remarks about the habits of this bird, and upon modes by which it is taken in Sicily. This savant also states that it does not inhabit any other part of the world, except Sicily and the island of Cyprus. I do not find it mentioned either in the Fauna of Portugal or that of Greece. "Yours, &c.,

"H. Schlegel."

Mr. J. H. Gurney sends us the following note on *Hirundo monteiri*, figured in our last Number (vol. iv. pl. 11):—

"The figure given of this Swallow in 'The Ibis,' vol. iv. p. 340, would appear not to be the first representation of this species which has been published, as the 'Hirondelle à ventre roux, du Sénégal,' figured by Buffon in the 'Planches Enluminées,' pl. 310, is a bird without the rufous nuchal collar, and therefore probably identical with that to which the designation of '*Hirundo monteiri*' has now been given.

"It is also worthy of remark, that in the short description given by Linnæus of his *Hirundo senegalensis* no allusion is made to the rufous collar.

"Brisson, on the contrary, describes the *Hirundo senegalensis* as having 'le col roux,' in which he is followed by more recent naturalists.

"The geographical boundaries of the two species will be an interesting subject of inquiry.

"Is it possible that the presence or absence of the nuchal collar is not a specific, but a sexual distinction?

"Perhaps this is a question deserving the attention of observers who may have the opportunity of ascertaining the fact.

"J. H. Gurney."

Dr. G. Hartlaub has lately received some important ornithological MSS. from Freiherr von Heuglin, relating to his recent discoveries on the White Nile. One of these we have already given (*anteà*, p. 31). Dr. Hartlaub further mentions a new *Corephegnathus*, a *Lamprocolius*, two *Ardeæ*, and a *Ciconia*, as being of great interest. The latter is described, "*cauda longa, profunde furcata, alba; rectrice prima valde elongata, nigra.*" This very anomalous Stork von Heuglin calls *Ciconia pruyssenaeri*, after the Belgian Baron Pruyssenaer de Lawostyne, from Bruges, who has lately been exploring the White Nile.

Mr. Gerard Krefft, in a letter dated Sydney, April 24, says:—

"During the last week, I have noticed a great number of the Yellow-eared Black Cockatoo (*Calyptorhynchus xanthonotus*). Flocks of from ten to fifty have been flying over the Museum, which is situated in a central part of the city. Their favourite place of resort is the thick scrubby country between Randovick and Botany. Though within a few miles of Sydney, this place is seldom disturbed by any of our Sunday sportsmen, which may account for the tameness of the birds; for I approached within twenty yards of a large flock several times. They seem to feed on the *Banksiæ* and *Eucalypti*, of which all the thickets are composed; and their plaintive cries may be heard for miles.

"If one of these birds is wounded, you are sure of the whole flock; they will not leave a companion in distress: and I am sorry to say that when on a collecting expedition to the Lower Darling, I often took advantage of their attachment to each other, and bagged as many out of a flock as the men of the camp could skin."

The following extracts are from Mr. Blyth's recent letters:—

"We have two allied species of Owl from Africa, each of which

I have at different times referred to the *Strix maculosa,* Vieillot, vel *Str. africana,* Temm. (Pl. Col. 50), which figure I have not now the advantage of consulting. Lesson classed this bird in *Otus,* in which he is followed by G. R. Gray in his 'British Museum Catalogue of Raptorial Birds' (1848), while Kaup assigns it to *Bubo.* The form belongs neither to one nor to the other; but a name will probably be found for it in the 'Synopsis Avium' of the late Prince of Canino*. In the size of the auditory orifices it accords rather with *Bubo.* The two species bear much the same relationship to each other in appearance that *Syrnium aluco* of Europe and N. Africa does to *S. nivicolum* of the Himalaya; but the difference is greater, inasmuch as the species from S. Africa has a considerably longer shank than that from E. Africa.

"The East-African bird is perhaps the *Otus madagascariensis* of Sir A. Smith (Catal. of S. African Museum), a description of which I have not seen; but it is more probably new and undescribed. It is the *Bubo* (?) *africanus* apud nos, from Somâli Land, procured by Capt. Speke, and described in J. A. S. xxiv. p. 298 (1855), where the provisional name *spekii* is suggested for it†.

"The other, from South Africa, is clearly the *Strix maculosa* of Vieillot or *Strix africana* of Temminck, which, as a sufficiently well-known species, I need not describe. It is larger than the preceding, with a proportionally longer shank, and bears, as I have said, a considerable resemblance in the colouring of its plumage to the Himalayan *Syrnium nivicolum.*

"Already I have a new Indian Raptorial to add to my catalogue—*Hæmatornis elgini,* Tytler, nearly allied to *H. cheela,* but of smaller size and much darker colouring, and with the occipital feathers less elongated; being further strongly distinguished by the markings of its great alar and caudal feathers. Instead of the broad pale band crossing the tail-feathers of *H. cheela,* the new species has a series of three narrow pale caudal bands,—the last subterminal, only half an inch broad, beyond which the black tail-tip is 1¼ in. Perhaps in the newly moulted plumage there may be slightly albescent extreme tips to the tail-feathers. Also, in lieu of the broad whitish bands which predominate on the under surface of the wing of *H. cheela*, our present species has slight and narrow pale cross-bands, the dark colour much predominating; and the white spots on the anterior portion of the inner surface of the wing are a good deal smaller. Irides yellow. Length of fresh bird 21 in.; extent 3½ feet; closed wing 14 in.; tail 9 in.; tarsi 3 in. Sex not stated. This being Tytler's first discovery in the Andamans, he has named it after the Viceroy. Both this and *H. cheela* inhabit the Andamans; but the new species would appear to be the more common of the two there. A second discovery Tytler names after the late Viceroy. It is an Andamanese Crake (*Euryzona canningi*, Tytler), most like *E. zeylanica* of India, but very much larger, with tail proportionally more developed. Entire upper parts and breast of a rich dark colour approaching to maroon; a slight olivaceous tinge about the rump; throat less deeply coloured; the abdominal region, flanks, and plumes black, with from two to four transverse white bands on each feather; under surface of the wing much the same. Length of recent specimen (♀) 13 in.; extent 21 in.; bill to gape 1½ in.; tarsi 2 in.; closed wing 6½ in.; tail 3½ in., and very cuneiform. Bill yellow, with slight tinge of green; eyes reddish orange; feet slate-green.

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* The term *Nisuella* is used for this Section by Bp., Rev. Zool. 1854, p. 542.—Ed.

† It is probably *Bubo dillonii,* Des Murs, Lefebvre's Voyage en Abyssinie, Zool. p. 73, pl. 3.—Ed.

"Tytler's new *Dendrocitta* he has not sent yet, but he thus describes it:—

"'*D. bazlei*, Tytler. Length 13½ in.; wing 4¾ in.; bill to gape 1 in.; tarsi 1 in.; wings and tail nearly black, with a broad white patch on wing; head, neck, and throat dark brown; back more rufous; belly and vent very rufous or chestnut; tail with twelve feathers (therefore not a *Crypsirhina*). Not uncommon on the main island.'"

Dr. Schlegel sends us the following notes:—

1. Amongst the skins of birds collected by Dr. Bernstein in the island of Mortay, there is a new species of *Lycocorax* (*L. morotensis*, Bernstein), resembling the *L. pyrrhopterus*, but somewhat larger, and having the primaries from the 2nd to the 7th white for the first third of their length. I do not find this

species amongst the new birds from Mortay, mentioned by Mr. Wallace in your 'Ibis' for October 1862, which Number I have only just received.

2. In the same Number I find the description and figure of a new species of *Ptilopus*, by Des Murs and J. Verreaux, under the name of *Leucotreron gironieri*. I had described and figured this bird in the course of last summer, under the name of *Ptilopus geversi*, in the 'Nederlandsch Tijdschrift voor de Dierkunde.' Unfortunately the publication of this work can only begin with 1863, although nine sheets of it were printed six months ago.

3. In this same 'Tijdschrift' you will find a description and figure of my *Ptilopus bernsteinii* from Batjan and Halmaheira. Not dreaming that this bird could already have taken a place in the genus *Carpophaga*, I found, quite by chance, and only after receiving males of it in perfect plumage, that my bird is the female, or the male in imperfect plumage, of *Carpophaga formosa*, G. R. Gray. But I believe the name of *Ptilopus bernsteinii* will stand, as there exists already a *P. formosus*, mentioned by G. R. Gray in the very paper wherein he notices his *Carpophaga formosa*.

Mr. S. Stevens, agent to Mr. F. Plant, has received a letter from him, dated Tamatave, Madagascar, August 29, 1862, in which he announces his safe arrival in that island. He states that he left Mauritius on the 5th of August, and, after four days' delightful sailing, arrived at Tamatave on the 9th. He found the letters of introduction kindly furnished him by Mr. Newton, M. Chauvin and others at Mauritius, of great use to him. Although he had only been there a fortnight, he had already collected about 800 insects, principally Lepidoptera, in the neighbourhood of Tamatave, and skinned a few birds. As the neighbourhood of Tamatave was not good collecting-ground, he was about to proceed to Alamazoatra, a village on the side of a large forest. He hoped to have a consignment of natural history to send to England in October. He says, "The natives are more civilized than I expected to find them, and appear to have a great respect for all Europeans. I go about with them without the least fear: they are always ready to do anything for me."

THE IBIS.

No. XVIII. APRIL 1863.

XII.—*On the Birds of the Interior of British North America.*

By Captain Thomas Blakiston.

(Concluded from p. 87).

Order IV. RASORES.

89. Ectopistes migratoria.

The first Passenger Pigeon arrived at Fort Carlton in 1858, on the 23rd of May; and by the middle of June numerous flocks were making their way northwards. They may be distinguished at a long distance, from water-fowl or waders, by their flight being in no particular order, but on the principle of "every one for himself, and the devil take the hindermost." On the Mackenzie Mr. Ross observes that it reaches Fort Norman in 65°, while Sir John Richardson has stated that on the coast of Hudson's Bay it is only found as far north as 58° in some summers.

90. Tetrao obscurus (Say).
—— *richardsonii* (Douglas).

That one or both of these fine Grouse inhabits the "interior" of British North America is certain from specimens collected by Mr. Douglas, Mr. Drummond, Mr. Bernard Ross, and myself. Mr. Ross considers his to be *T. richardsonii*—the black-tailed and smaller species, to which also I refer the figure of the male in the 'Fauna Bor.-Am.' The specimen which I brought home, mentioned in my original list ('Ibis,' vol. iv. p. 8), measured 18½ inches in length and 8 inches in the wing: another female, shot a week later, differed only in being one inch shorter in the total length. The eye was of a light yellowish brown; feet very light greenish ash, feathered as far as the division of the toes; bill dusky brown; patch above the eye yellow. A decided half-erected crest is observable on the bird's head when alive. In my wanderings, I met with these birds only in or near the pine-woods on the slopes of the Rocky Mountains; but, having only killed females, I cannot be certain of the species. One or the other Dusky or Black-tailed Grouse ranges towards the Pacific, as far as the Cascade Mountains of Oregon, Washington, and British Columbia, and along the Rocky Mountains from the head waters of the Platte to the Liard River, a tributary of the Mackenzie. When the two species are properly defined, I think it likely that *T. richardsonii* will turn out to be the more northern.

TETRAO CANADENSIS.

The Canada Grouse is given in the 'Fauna Bor.-Am.' as a resident in the thick spruce-forests of the interior, and one is there noted from the eastern declivity of the Rocky Mountains: there is also a specimen in the Smithsonian Institution from Red River Settlement; and it is given by Mr. Murray from Hudson's Bay. I found it as far west as Fort Carlton; and Mr. Ross has traced it northward on the Mackenzie to the Arctic coast.

91. TETRAO FRANKLINI.

This bird, first made known as a distinct species, by specimens from the Rocky Mountains, by the lamented David Douglas, seems to be confined to that range and the country lying between it and the Pacific. Not being aware of the existence of a bird closely allied to *T. canadensis*, I did not take any particular care in examining individuals which I obtained at different times on the Saskatchawan; but still I think, if I had come across this bird, I should have been attracted by the dissimilarity. The first time I observed Franklin's Grouse was while following an Indian trail through thick pine-woods, from the summit of the Kootonay Pass into the valley of the Flathead River, on the 21st of August 1858. I do not know what induced me to shoot the bird, for it was not my custom to waste ammunition; but it may have been that I was in better humour than usual from having just crossed the watershed of the Rocky Mountains, and that, too, by a pass hitherto untrodden by any white man. I was some distance ahead of my party, and on foot, having, as the descent was rather steep, tied up the reins and stirrups and allowed my riding-horse to follow along with the pack-animals; and as I proceeded along the Indian path, a Grouse rose and perched itself on a projecting branch. My double rifle being over my shoulder, a bullet through its body brought the bird to the ground. It was in the female plumage, 13¾ in. in length, 7 in. in the wing, with a hazel eye, and bright patch of vermilion over it. I was at once struck with a certain dissimilarity to the Canada Grouse, a bird I knew well; and this was further strengthened by finding, when it came to be cooked, that the flesh was white, while any one who has lived in Canada or the north-eastern States knows that the Spruce Partridge is distinguished from the "white-flesher"—the Birch Partridge or Ruffed Grouse (*Bonasia umbellus*)—by the darkness of its flesh, which has usually a very turpentine flavour, thought to be produced by the habit of feeding on spruce-leaves. On the 24th, while still in the mountains, one of my men shot a male; it was not, however, in quite perfect plumage. Its breast was black, with white spots at the ends of some of the feathers; throat nearly black, with an indistinct white line surrounding it; and there was not a sign of any colour but black in the tail-feathers; over the eye was bright scarlet; length 17 in., and wing 7¼: this bird had also been shot with ball, and therefore I did not preserve it. On the day following we got amongst a covey, and killed six of them; but they were all young, except the old female, which was minus her tail-feathers. They were just as unsuspicious and stupid as the Canada Grouse, allowing themselves to be shot down off the trees without making any attempt to escape. As I was recrossing the mountains on the 3rd of September, I managed to procure a pretty good female specimen ('Ibis,' vol. iv. p. 8). It measured 15 in. in length, and 6¾ in the wing; had the eye brown, bill dusky, and feet ash. I observe that Mr. Ross does not include Franklin's Grouse among the birds of the Mackenzie; and I may mention that there is an error in the 'Fauna Bor.-Am.' in the reference to a figure of this species, pl. 61 being evidently *T. canadensis*.

92. PEDIŒCETES PHASIANELLUS.

Taking the place, on the northern prairies, of the Prairie Hen (*Cupidonia cupido*), the Sharp-tailed Grouse (the "Pheasant" of the fur-traders and half-breeds, and *Ahkis-skieu* of the Cree Indians) is very generally distributed throughout the interior. It is found in the wooded districts, as well as on the plains; but in the former it generally resorts to the most open places. It came under my observation first just below the forks of the Saskatchawan; and thence I found it to the Rocky Mountains, and also at the western base of the range. It also inhabits Red River Settlement and Northern Minnesota, extends eastward to the shores of Hudson's Bay, and Mr. Ross notes it on the Mackenzie as far north as the Arctic Circle. My specimens ('Ibis,' vol. iv. p. 8) were both obtained at Fort Carlton, in which locality the bird was found to breed: the eggs are as many as a dozen, of a chocolate-brown, with minute speckles of dark brown, hatched on the ground. During my stay in the Indian country, I could not but have constant opportunities of observing the habits of the Sharp-tailed Grouse at all seasons of the year, where I have shot hundreds of them; in fact, when hard pressed for food, I often existed for days together on no other fare. Like the Ruffed Grouse, they seem to be polygamous, collecting in the spring at certain chosen spots for the purpose of love-making on a grand scale, as I shall presently describe. After the breeding-season they are to be found in families at the edge of the prairies, or rather in the semi-wooded country bordering the treeless prairie wastes, where they often perch on trees, frequently at the very tops; and their crops are usually to be found literally filled with berries, of which I have taken from a single one as much as would fill a half-pint. These, in the fall of the year, are the Bear-berry (*Arctostaphylos uva-ursi*), the "*kinnik-kinnik*" of the Crees, the leaves of which are much used by the half-breeds and Indians as a substitute for, or to mix with tobacco, the Ground-Juniper (*Juniperus prostratus*), the Snow-berry (*Symphoricarpus racemosus*), the small Briers of the prairie (*Rosa* *blanda* and *R. micrantha*), the Buffalo-berry (*Shepherdia argentea*), and buds of the *Hippophaë canadensis*, Cherry-birch (*Betula lenta*), and willow. In spring I have also found the crops to contain the flowers of *Anemone patens*; and Mr. Hardisty, the Master of Fort Carlton, on whose word I could rely, informed me that in the beginning of April, while travelling in search of buffalos over a part of the plains which had been burned by a prairie-fire the preceding autumn, he found in their crops a number of baked caterpillars and insects. In winter they collect in large packs, and, during fine weather, bask in the sun, perched on willows and aspens; while at other times they scrape holes through the snow down to the ground, and squat there.

Towards spring the Sharp-tailed Grouse of a neighbourhood collect at a certain spot on the prairie (usually a small mound or other raised position) twice a day, morning and evening, about the time of sunrise and sunset, to celebrate, in their peculiar way, festivities of love, displayed to so remarkable a degree by birds of this family. By the inhabitants of the fur-countries this is called "dancing." It is commenced even before the snow is off the ground; and one frequently comes by chance on such places where the snow and grass are beaten down for the space of many yards. I had often, during the spring mornings, heard the peculiar chuckling noise made by the birds on these occasions; for it can be heard at a distance of over half a mile; but having been confined to the Fort during that part of the day by magnetic observations, I was not able to search out the originators of it, which was the more annoying as the hunters and others used to tell me most wonderful stories of the "pheasants' dance." However, I was not doomed to be altogether disappointed; for, after our arduous work was completed, I went out on a trip to the plains, with the buffalo-hunters, at the commencement of April. On awaking one morning, when we were camped at a place called the "Mosquito Springs," my ears caught the well-known chuckling sound. I need hardly say that I was not long before I tied on my mocassins, and made my way towards a small knoll on the plain, which was but a short distance from our night's camp; and on nearing the place I could observe some Sharp-tailed Grouse running about. They were quite unsuspicious, as is always the case on these occasions, and did not seem to heed my approach; but as I wanted to get as near a view as possible, I went down on my hands and knees, and crawled towards the spot. Getting closer, I lay flat on my stomach, and pushed myself along till I gained the cover of a small stone (a rare thing on the prairies) near the top of the knoll, within ten yards of some of the birds, where I stationed myself, and was well repaid the trouble of getting there. In this instance there were eight or ten birds (there are often many more) engaged in the performance. The two nearest to me were in the attitudes of fighting-cocks opposed to each other, and, besides the feathers of the occiput, ear-coverts, and whole neck being set out to the greatest extent possible, the sharp-pointed tail was erected at right-angles to the back, thereby causing the light-coloured under tail-coverts to assume the form of a rosette; the wings were lowered and somewhat spread out, touching the ground, the quill-feathers of which, kept in a constant quiver, made a sound like the rustling of a lady's silk dress. These two every now and then circled round, but kept their bodies in the same attitude, their heads nearly touching the ground, and again and again they "came up to the scratch." Occasionally one of the two would make a jump in the air to the height of a couple of feet, and sometimes they chased one another; but they did not appear to fight. A little beyond these two front actors was one amusing himself by strutting about with his head as high as he could get it, and, like the others, with his tail erect; in fact, as his back was inclined, the tail, being vertical, was bent forward towards it: this is much more than the bird is wont to do at other times; for although, when it is frightened and about to take wing, it erects its tail, it is not nearly to the same extent. Besides these, others were running about and chasing one another in various directions, occasionally taking up the position of fighting-cocks, as already described. Then there were a couple which appeared to be doing nothing, but still they had their tails erected like the others. An odd one or two every now and then flew up and pitched again within a few yards. But above all this, and besides the rustling sound of the wings, there was a constant loud chuckling noise kept up, which added music to the ceremony. I cannot describe the sound, but it is at times very loud, neither do I know how the birds make it. All this is the scene for a picture, and I should like to see a competent zoological artist take it in hand.

Pediœcetes urophasianellus.

This bird, described by Douglas ('Trans. Linn. Soc.' xvi. 1829, p. 136), but passed over by Richardson and Swainson in the 'Fauna Bor.-Am.,' Mr. Ross has re-established as a species; but I have only here inserted it in *italics,* as I am not yet aware on which side of the Rocky Mountains he obtained his specimens. He has also procured the egg.

BONASIA UMBELLUS.

There is a specimen in the Smithsonian Institution of the Ruffed Grouse from Red River Settlement. It is mentioned in the 'Fauna Bor.-Am.'; and I observed it from near Hudson's Bay sparingly westward close to the Forks of the Saskatchawan, but, being then ignorant of the existence of more than one species, I do not know whether some individuals of this genus which I found at the western base of the Rocky Mountains were of this or another. Mr. Ross gives both *B. umbellus* and *B. umbelloides* as inhabitants of the Mackenzie.

93. LAGOPUS ALBUS.

The Willow Grouse (*Tetrao saliceti* of the 'Fauna Bor.-Am.') ranges across the interior, from Hudson's Bay to near the Rocky Mountains. I obtained a chance bird ('Ibis,' vol. iv. p. 8) near Fort Carlton; but it is not every winter that they migrate so far south on the Upper Saskatchawan. Nearer Lake Winipeg, at Fort Cumberland and to the eastward, they are common every winter; and numbers of specimens are received from the shores of Hudson's Bay, where it is in considerable request as an article of food in winter. (Refer to the article on Geese.) Mr. Ross mentions this species as common on the Mackenzie.

LAGOPUS RUPESTRIS.

The Rock Ptarmigan, on the authority of the 'Fauna Bor.-Am.,' inhabits the "barren grounds" of the Arctic regions and Hudson's Bay. Mr. Ross mentions it as rather rare on the Mackenzie, but that it reaches the most northern land.

LAGOPUS LEUCURUS.

The only specimens of the White-tailed Ptarmigan yet obtained have been from the Rocky Mountains. It has been found by Mr. Ross as far north as the Arctic Circle, and on the authority of American explorers extends south to lat. 39°.

Another Ptarmigan has been called *L. americanus* and *L. mutus*, from Baffin's Bay; but there seems to be a good deal of uncertainty yet, which requires clearing up, with respect to these interesting birds. I find that several English naturalists, following Sir William Jardine, have come to the conclusion that the Willow Grouse of North America and Europe and the Red Grouse of Scotland are one species. That they agree in size and form is allowed; but then, why should we not consider the Common Fieldfare and Missel Thrush of our own country as one? for when an albino is examined, it is impossible to say with certainty to which species it belongs.

Order V. GRALLATORES.

GRUS AMERICANA.

At different times, during my travels in the interior, I observed White Cranes, but was never fortunate enough to procure a specimen. The 'Fauna Bor.-Am.' records one from the Saskatchawan; and Mr. Ross from Fort Simpson, on Mackenzie River, where they are rare.

94. GRUS CANADENSIS.

The Sand-hill Crane arrives on the Saskatchawan, in large numbers, from the south, in April; and in the beginning of May I found its eggs. Individuals shot measured from 41 to 42½ in. in length, wings 19 to 21 in., and bill 5 in. along the ridge; they were found to differ considerably in the amount of rust-colour on the plumage. I found this bird as far west as the Rocky Mountains; Mr. Murray notices it from near Hudson's Bay; while the 'Fauna Bor.-Am.' records a specimen from Great Slave Lake, and Mr. Ross notices it as common on the Mackenzie to the Arctic coast. *Grus fratercula* is also given by Mr. Ross, but as an inhabitant of the west side of the Rocky Mountains only.

ARDEA HERODIAS.

The Great Blue Heron, mentioned in the 'Fauna Bor.-Am.' only as accidental in the interior, was found breeding by M. Bourgeau, in July 1858, near Battle River, a tributary of the north branch of the Saskatchawan. There were several nests in a poplar-wood, situated in a large ravine near a lake; they were about fifty feet from the ground. One was taken, which contained six eggs of a greenish blue; and a parent-bird was shot, which I carefully compared with Wilson's description. The length of the skin was 50 inches, wing 18½ in., and bill, from the forehead, 6 in. For my own part, I never saw a Heron until I was leaving the interior, when I observed what I took for an individual of this species, in Northern Minnesota, near the 49th parallel, on the 2nd of May.

BOTAURUS LENTIGINOSUS.

The American Bittern is not an uncommon bird in the interior, although I cannot boast of a specimen; however, one is recorded in the 'Fauna Bor.-Am.' from the Saskatchawan, and there is a specimen in the Smithsonian Institution from Nelson River. Mr. Murray notices it from the coast of Hudson's Bay; and Mr. Ross gives the range on the Mackenzie to the Arctic coast.

95. CHARADRIUS VIRGINICUS.

The breeding-quarters of the American Golden Plover being the "barren grounds" and coasts and islands of the Arctic Sea, it is only a passing visitor in the more southern parts of British America. It is numerous in autumn on the shores of Hudson's Bay; but I do not fancy it can be a common bird on the western plains; for I only shot a single individual ('Ibis,' vol. iv. p. 8) in the fall of they ear, which I took to be a maimed bird, and one again in the spring. Mr. Murray has received specimens from Hudson's Bay; and Mr. Ross notes it as abundant on the Mackenzie.

96. ÆGIALITIS VOCIFERA.

The Kildeer arrived in the neighbourhood of Fort Carlton on the 19th of April in 1858. I found it a difficult bird to approach within the range of small shot. Besides my own, M. Bourgeau obtained specimens and eggs on the Saskatchawan ('Ibis,' vol. iv. p. 8).

Æ. montana, having been obtained on the Upper Missouri, will probably be found in the western parts of British territory.

ÆGIALITIS SEMIPALMATA.

In the 'Fauna Bor.-Am.' a specimen is recorded from near York Factory; and Mr. Murray mentions it from Severn House, also on the coast of Hudson's Bay, and between there and Lake Winipeg. Mr. Ross, moreover, notes it as common on the Mackenzie.

SQUATAROLA HELVETICA.

I fancied this bird was confined to Hudson's Bay, whence I have received a specimen, as well as Mr. Murray; and one is recorded thence in the 'Fauna Bor.-Am.;' but I now observe that it has been found by Mr. Ross on the Mackenzie, but it is rare.

STREPSILAS INTERPRES.

I have received several specimens of the Turnstone from York Factory, where I observed it myself in August; and it is recorded by Mr. Murray, and in the 'Fauna Bor.-Am.' from Hudson's Bay. Mr. Ross has given it as a rare bird on the Mackenzie.

RECURVIROSTRA AMERICANA.

The American Avocet is given in the 'Fauna Bor.-Am.' as from the Saskatchawan Plains, where, on the shores of the shallow lakes, it feeds on insects and small fresh-water Crustacea. I shot the bird in such localities near Fort Carlton. Mr. Ross considers it rare on the Mackenzie. The White Avocet of Cassin is considered only an accidental variety of this species.

PHALAROPUS WILSONII.

This bird is given in the 'Fauna Bor.-Am.' as breeding on the Saskatchawan, but not observed near Hudson's Bay.

PHALAROPUS HYPERBOREUS.

The same authority mentions this species as breeding on the Arctic coasts, and resorting to Hudson's Bay in autumn, whence I have received specimens. An individual is recorded from Great Bear Lake; but Mr. Ross notes it as a rare bird on the Mackenzie.

PHALAROPUS FULICARIUS is also mentioned as seen in high northern latitudes by the Arctic Expeditions; but simply on this claim I should not have included it in this list, had I not myself received specimens from Hudson's Bay in its fine breeding-plumage.

97. GALLINAGO WILSONII.

My specimen ('Ibis,' vol. iv. p. 9) is considered to be of this species of Snipe, to which also Prof. Baird refers *Scolopax drummondii* and *S. leucurus* of the 'Fauna Bor.-Am.' In all the true Snipes which I shot in the interior, I never noticed any distinctions to make me suspect more than one species. In the neighbourhood of Fort Carlton I did not observe the Snipe before May; while the last seen on the Lower Saskatchawan in the autumn was on the 1st of October. At Red River Settlement I found it on the 29th of April; but as that was in a late spring, I should imagine that it usually arrives earlier. This Snipe performs the same aërial evolutions which have been observed in the English bird. I remarked that this was usually done about sunset; and I have known it continued till an hour and a half later. The noise which the bird makes on these occasions I can only compare to quickly repeated switches (quicker than can be done by the hand) of a withe or cane in the air, which is repeated every half-minute or minute, but with occasional longer intervals. The duration of the sound is about three seconds, and is made (how I do not know, but am inclined to believe it is by the quill-feathers of the wings) as the bird descends rapidly in a vertical direction. I have known this to be done also in mid-day. These observations refer to the end of April and May, which is the love-season.

MACRORHAMPHUS GRISEUS.

Macrorhamphus scolopaceus.

I did not preserve a specimen of the Red-breasted Snipe; but I examined three which were shot out of a flock of six, near Fort Carlton, in the third week in May. They were all females, and measured 12 in. in length, $5\frac{3}{4}$ to $5\frac{7}{8}$ in. in the wing, and $2\frac{3}{4}$ to $2\frac{7}{8}$ in. along the ridge of the bill. In the 'Fauna Bor.-Am.' *M. griseus* is recorded from Great Bear Lake, under the name of *noveboracensis*; but Mr. Lawrence has described a second species as *M. scolopaceus*, the principal distinction of which is size. Mr. Ross records both species from Mackenzie River. I am inclined, however, to doubt the existence of *M. scolopaceus* as a distinct species, and should not be at all surprised if all Mr. Lawrence's birds turned out to be females, the greater size of which obtains in some birds of this family.

TRINGA CANUTUS.

Arctic America and Hudson's Bay ('Fauna Bor.-Am.').

TRINGA MARITIMA.

Melville Peninsula and Hudson's Bay ('Fauna Bor.-Am.').

TRINGA ALPINA, var. AMERICANA.

Arctic Sea, Saskatchawan, and Hudson's Bay ('Fauna Bor.-Am.'). Mr. Murray also records *T. alpina* from Hudson's Bay, whence also I have seen a specimen.

TRINGA MACULATA.

Common on the Mackenzie (Bernard Ross).

TRINGA WILSONII.

Breeds within the Arctic Circle ('Fauna Bor.-Am.' as *T. pusilla* of Wilson). *Tringa minuta* (Liesler) is also given by the same authority from Hudson's Bay. Mr. Ross obtained the former on the Mackenzie.

TRINGA BONAPARTII.

A specimen is noted from the Saskatchawan in the 'Fauna Bor.-Am.' under the name of *T. schinzii*; and Mr. Ross notices it as a bird of the Mackenzie, where he procured its egg. It has been obtained by United States Expeditions as far westward as the Yellowstone branch of the Missouri.

CALIDRIS ARENARIA.

Given by Mr. Ross on the Mackenzie, is also noticed in the 'Fauna Bor.-Am.,' but no specimen is there recorded. Between Hudson's Bay and Lake Winipeg I shot what I took to be the Sanderling.

EREUNETES PETRIFICATUS.

This was first given in the 'Fauna Bor.-Am.' on the authority of Hutchins from Hudson's Bay. At York Factory, on the mud-flats which are extensive there, I believe I obtained the Simipalmated Sandpiper. Mr. Ross mentions it on Mackenzie River.

MICROPALAMA HIMANTOPUS.

The Stilt Sandpiper is given in the 'Fauna Bor.-Am.' from the west side of Hudson's Bay, and also *Tringa douglasii,* which is probably the same species. Mr. Ross considers it very rare on the Mackenzie.

SYMPHEMIA SEMIPALMATA.

Saskatchawan ('Fauna Bor.-Am.').

98. GAMBETTA MELANOLEUCA.

Besides being included in the 'Fauna Bor.-Am.,' Mr. Murray records it from Hudson's Bay, where I observed the Tell-tale common in August; thence I found it along the whole route to the Saskatchawan, on the north branch of which it remained in 1858 as late as the 28th of October; and my specimen ('Ibis,' vol. iv. p. 9) was from near Fort Carlton, in spring, where it had arrived by the 18th of April. This bird does not seem to require muddy shores, but appears just as much at home where all is rock. Mr. Ross further extends its range to the Mackenzie, but notes it as rare in that region.

99. GAMBETTA FLAVIPES.

The Yellow-legs is mentioned in the 'Fauna Bor.-Am.' as reaching as high as the northern extremity of the continent. My specimen ('Ibis,' vol. iv. p. 9) was from near Carlton. Mr. Murray records it from Hudson's Bay, and Mr. Ross as abundant on the Mackenzie.

100. RHYACOPHILUS SOLITARIUS.

Mr. Ross found this bird common, and usually in large flocks, on the Mackenzie. It is said to breed far north, as well as in the south. Besides my specimen from the Saskatchawan ('Ibis,' vol. iv. p. 9), the 'Fauna Bor.-Am.' records one from Great Bear Lake, under the name of *Totanus chloropygus. Totanus calidris* of Europe is also therein given from a specimen in the British Museum, supposed to be from Hudson's Bay, as also *T. ochropus*; but neither of these is included in Professor Baird's Report on the Birds of N. America.

TRINGOIDES MACULARIUS.

Abundant on the Mackenzie (Bernard Ross).

101. ACTITURUS BARTRAMIUS.

The 'Fauna Bor.-Am.' mentions this bird as seen only in the plains of the Saskatchawan; my specimen ('Ibis,' vol. iv. p. 9) was from the same locality, where we found it breeding during summer.

TRINGITES RUFESCENS.

Rare on the Mackenzie (Bernard Ross).

102. LIMOSA FEDOA.

Mentioned in the 'Fauna Bor.-Am.' as plentiful on the Saskatchawan, where my specimen ('Ibis,' vol. iv. p. 9) was obtained; it is also recorded by Mr. Murray from Hudson's Bay, whence I have since received a specimen.

LIMOSA HUDSONICA.

A specimen is given by Mr. Murray from Hudson's Bay, whence I have also seen it; it is also mentioned in the 'Fauna Bor.-Am.' as breeding abundantly on the "barren grounds" of the far north. Mr. Ross, however, considers it rare on Mackenzie River.

NUMENIUS HUDSONICUS.

Breeds in the interior; a specimen from the Saskatchawan ('Fauna Bor.-Am.'). Slave Lake (Bernard Ross).

NUMENIUS BOREALIS.

Barren lands within the Arctic Circle: a specimen from the Rocky Mountains ('Fauna Bor.-Am.'). Mackenzie River (Bernard Ross).

The Long-billed Curlew (*N. longirostris*) is given in the 'Fauna Bor.-Am.' on the authority of a specimen in the British Museum said to be from the fur-countries.

PORZANA CAROLINA.

A specimen of this bird is in the Smithsonian Institution from Red River Settlement; Mr. Murray notices it from the shores of Hudson's Bay; the 'Fauna Bor.-Am.' records it from the Saskatchawan, and Mr. Ross from the Mackenzie.

P. noveboracensis is also given in the 'Fauna Bor.-Am.,' on the authority of Hutchins.

103. FULICA AMERICANA.

The American Coot, or, as it is called by the half-breeds and fur-traders, the "Water-Hen," may be found in large numbers on the reedy lakes of the Saskatchawan prairies, where it arrives from the south to spend the summer at the end of April. It has a habit of making a sharp rattling noise at night, and, moreover, is said to migrate during darkness only, which the Cree Indians account for by affirming that, if these birds were to fly by day, the Ravens would chase them, taking the white bill for a piece of fat. The eggs of the Coot are collected in great numbers by the fur-traders. I went once in company with one of them, and by having a bark canoe, which we could push through the grass and reeds growing in the lake, we collected a hundred and fifty during a few hours; this, however, was considered but a poor day's work. My specimen ('Ibis,' vol. iv. p. 9) was from Fort Carlton, and Mr. Ross records it from the Mackenzie. It is considered that this bird is not found near Hudson's Bay.

Order VI. NATATORES.

CYGNUS AMERICANUS.

The American Swan, under the name of *C. bewickii,* is given in the 'Fauna Bor.-Am.' as breeding on the Arctic coast; and on the Saskatchawan I observed a species distinguishable from *C. buccinator* by the harshness of its note, which approached more to that of the Crane, migrating northward in flocks late in April. I was told that the Crees, who notice it as a smaller bird, call it the "bad-looking Swan," probably on account of many being found in the rusty plumage. Mr. George Barnston mentions ('Ibis,' vol. ii. p. 253) the hatching of a Swan near Norway House, at the north extremity of Lake Winipeg, as rather exceptional; but gives the south end of Hudson's Bay as a favourite locality, although most make their way to the far north for this purpose. Mr. Ross mentions *C. americanus* as "not common" on the Mackenzie. I have lately seen a specimen from Hudson's Bay agreeing with *C. americanus* in the yellow spot on the bill. It measured in the wing 23 inches, 2¼ along the ridge of the bill, and had 22 tail-feathers. It was very slightly tinged with rust-colour.

104. CYGNUS BUCCINATOR.

I preserved the skin of a Trumpeter Swan, and also its windpipe, in natural form, which I shot at Fort Carlton, on the Saskatchawan, on the 30th of March ('Ibis,' vol. iv. p. 9). It was in the afternoon, and I had hardly made my way a quarter of a mile from the Fort when the bugle-like note of a Swan struck on my ear, and, looking up, I beheld a huge fellow coming along with a steady flight against a head wind. It was but the work of a few seconds to whip the cover off my gun, draw the bead on him, or rather ahead of him, and pull the right trigger, when a cartridge, which I had made myself, of 'BB' shot went spinning towards him, but, at the distance he seemed to be, I thought it unlikely to do him any harm. What was my delight when, after a sort of half-pause, one wing drooped, and then he fell from his great height, with a crash, into an aspen-coppice. I ran in and found him on his back, the only sign of life being a slight movement of the head, which, before I had completed reloading, had ceased. I subsequently paced the distance, and found it to be fifty-two yards: one or two grains, however, had entered his heart. Tying the legs of my prize together, I pushed the stock of my fowling-piece between them and trudged off with him at my back, his head dangling down and touching the calves of my legs; and as I entered the Fort I was greeted by the Indian yells of a pack of young urchins; for it was the "first Swan" of the season. I may say that I was also fortunate enough to kill the first Goose and first Duck that spring, which established me at once as a bird-hunter of rank amongst the Indians and half-breeds of the neighbourhood. This specimen of *Cygnus buccinator* was considerably tinged with rust-colour; it measured 60½ in. in length, 26½ in. in the wing; and in extent 8 ft. 3 in.; bill along the ridge 4⅝, ditto to slit of mouth 4½ in.; the second and third quill-feathers were nearly equal and the longest, the first being longer than the fourth. The eye was brown, bill black, legs, feet, and claws dull lead-black. It was a male, and weighed 23 lbs.

A description of the plumage would be, white, with the whole under parts, head, and first half of the upper part of the neck tinged with bright rush-colour, darkest on the top of the head behind a line crossing the forehead from eye to eye, which line of division is strongly marked. Of the lower parts, the chin and second half of the neck are least tinged—in fact, nearly white. This rust-colour is confined to the ends of the feathers. Shafts of all the feathers white, Dr. Richardson considers this the more common of the two Swans inhabiting the interior, and the earlier visitor, with which my observations agree. Mr. Ross notes it as common on the Mackenzie.

ANSERINÆ.

It may be well imagined how the first material evidence of spring and plenty, evinced by the arrival of waterfowl on their northward migration, is hailed by the hardy fur-traders and voyageurs of the interior, after having been shut up for months in an isolated fur-trading fort, separated by hundreds of miles of a snow and ice-bound wilderness from the most advanced limits of civilization, and perchance living on no very liberal allowance of jerked buffalo-meat or frozen white-fish. I well recollect this circumstance in the spring of 1858. It was on the 28th of March that our eager eyes, having been watching for weeks for some sure indication of a break-up in the winter, were greeted with this welcome sight. It was Sunday (happily kept even in those wild regions as a day of rest) that we observed one or two Geese and a flock of Ducks pass over, with somewhat undecided flight, evidently in search of an open piece of water or marsh as a resting-place; but there was as yet none to be found in the neighbourhood. Nevertheless the birds had rightly judged in anticipation, led by the unerring hand of Him who alone directs the progression of the seasons, and guides the world in its annual path; for, during the two following nights, the temperature only just reached the verge of freezing, leaving pools of snow-water formed by the powerful mid-day sun unskimmed by ice; and a couple of Ducks were bagged on the 29th. All became now astir, getting guns cleaned, fixing flints (the flint gun is still in general use in the fur-countries), and making ready for the campaign, each one being eager to kill the "first goose," which is always considered somewhat of a feat. To this end, in the next few days, numerous wooden decoys appeared, all deviating, more or less, from the natural model, which, I must own, none came very near. Mine were roughly hewn out of a log of wood, with no other tools but an axe and a saw, and smeared with charcoal in place of paint; however, they answered the purpose exceedingly well; for it is wonderful what imperfect imitations, either in call or effigy, will attract waterfowl in spring-time, when there are but few places to select suitable for halting and feeding. On this subject I must refer all who take especial interest to a communication on the "Swans and Geese of Hudson's Bay," by my much-respected friend Mr. Geo. Barnston ('Ibis,' vol. ii. No. 7), whose opportunities for the observance of the fauna and flora of the northern portion of the American continent, during a life passed in the service of the Hudson's Bay Company, have been so well taken advantage of. Besides recording the different species of Geese found in the "interior," which I shall advert to under their several heads, Mr. Barnston has furnished reliable returns of the numbers annually slaughtered, from which he estimates that no less than the enormous amount of 800,000 Geese (the Brant not included) wing their way southward from the country lying between Hudson's Bay and the Rocky Mountains every autumn. Now this, I feel sure, is not over the mark; for I was informed, on good authority, that at York Factory alone the average number of Geese salted down for the use of the Hudson's Bay Company's establishment is thirty barrels in the spring and twenty-three in the fall; while Severn House supplies York Factory with other forty barrels annually. This is confirmed by a letter from my friend Mr. James R. Clare, now in charge of the northern dépôt at York Factory, in which he says:—"In an average of five years we have expended at this place annually 5857 Geese, 2155 Ducks, 1870 White Partridges (Willow Grouse), and 2480 Plovers; the quantity, however, varies according to the season, more especially in Partridges (Grouse), 4474, for example, having been expended in one of these years." These additional returns, and the immense flight of Geese which I have seen in the Saskatchawan country, induce me to believe that Mr. Barnston has far from overrated the *Anserinæ* of the "interior."

ANSER HYPERBOREUS.

The Snow-Goose (the "Wawie" of the Cree Indians, or "Wavy" of the voyageurs) is late in its arrival in spring; but, like the American Swan, delays behind the others of the family in going south in autumn, after which, as Mr. Barnston has so happily expressed it, "the coast that has been resonant with their petulant and incessant cries, and covered patchlike by their whitened squadrons, is silent and deserted, a barren and frozen shore." The species appears numerous both on Hudson's Bay and in the west, as I have seen it as far as the Rocky Mountains; and Mr. Ross says it is abundant on the Mackenzie. Although I shot the bird, I did not preserve a specimen, as I thought it a well-marked species, and I had much work on hand at the time. An anecdote was related to me concerning the Snow-Goose by Mr. Pruden, a fur-trader, which is, I think, worthy of record. His father, living at Red River Settlement, had obtained in some way or other, and managed to domesticate, a pair of "Wavies;" but, after a while, one died. The next fall, as a flock of this species was passing over, a bird singled itself out and descended to the tame Goose, and, taking up its quarters in a business-like manner, lived with it all the winter. The following spring, as some of his relations came by, he took wing, joined the flock, and proceeded to the north; but, curious enough, in the fall, returned again to his adopted winter mate, and lived with it as in the previous winter. It had done this for two or three years; but in the spring of 1857, when Mr. Pruden went to his father's house, he missed the bird, and presumed it had been killed or something had happened to it. One might have expected such an occurrence as this, had the stay been made during the breeding-season, in place of remaining to brave out the inclement season of a northern winter.

ANSER ALBATUS (Cassin).

ANSER ROSSII (Baird).

In his paper "On the Fauna of the Mackenzie River District" ('Nat. Hist. Rev.' No. 7), Mr. Bernard Ross remarks:—"There can be no doubt of the existence of three species of Snow-Geese, exclusive of the Blue Wavey of Hudson's Bay, as the Slave Lake Indians have a different name for each kind. The first which arrives is the middle-sized species, which I believe to be *A. albatus*; next comes the smallest sort, *A. rossii*; and lastly the *A. hyperboreus*, which arrives when the trees are in leaf, and is called the Yellow Wavey by the Indians." Of *A. albatus* Mr. Ross did not procure a specimen; but he feels sure that he has shot it on Great Slave Lake, whence he obtained the third species, described by Prof. Baird as *A. rossii*. For my own part, I can only speak to having *heard* of more than one species of Snow-Goose. There is now a specimen of *A. rossii* to be seen in the British Museum, the locality of which is supposed to be California; it was purchased in Paris.

ANSER CÆRULESCENS.

When the 'Fauna Bor.-Am.' was written, there was no suspicion of this being a true species in N. America; hence Dr. Richardson noted that the young and old Snow-Geese were said to go in separate flocks: this point, however, Mr. Barnston ('Ibis,' vol. ii. p. 256) has perfectly cleared up by his labours in the field; while Mr. Cassin arrived at the same conclusion in the museum. By the observations of the former, the "Blue Wavy" (figured originally by Edwards) seems to prevail on the eastern side of Hudson's Bay and in Labrador. I cannot trace it inland to the westward. I have received two specimens from York Factory, and, on careful comparison at the British Museum with Mr. George Grey, can detect no difference in form or size from *A. hyperboreus*. The specimens, however, have every appearance of being adults; and we must take this as another example of two species being undistinguishable except by colour. The fact of the Blue Wavy being unknown in localities where the Snow-Goose is common is perhaps the strongest argument in favour of its existence as a species. For other distinctions I refer to Mr. Barnston ('Ibis,' vol. ii. p. 256).

ANSER GAMBELII.

The American White-fronted or Laughing Goose appears, as observed by Mr. Barnston, to be more an inland and western species, being seldom found in the southern part of Hudson's Bay. It is a common bird on the Saskatchawan in spring and autumn, at which latter season it is to be found in immense numbers. Mr. Ross also notes it as common on the Mackenzie to the Arctic coast. The low marshy country bordering the lower part of the Saskatchawan River, in the neighbourhood of Fort Cumberland and "the Pas" Mission, is a great resort, where, in 1857, as I passed on my boat-voyage at the close of September, I had a good introduction to the water-fowl. I saw many Indians return in the evening, after the day's "Goose-hunt," with their bark canoes literally filled with geese; and they were mostly of this species. This, I regret, led me into hot water; for, happening to mention that in our progress, during a high breeze, we passed through a shower of feathers that I supposed came from some Indian encampment adjoining the river, I was questioned by a correspondent in the 'Zoologist' ('Zool.' 6642) as to whether I could distinguish, better than the ancient Scythians, feathers from snow; to which being forced to reply, I proposed a simple experiment admirably adapted for a closet naturalist; but this was unfortunately mistaken for "chaff," as I was informed in a second letter ('Zool.' 6763). However, I hope (for I left England shortly after, and was unable to reply again to my critic) that by this time both feathers and chaff are entirely blown away, and that I need say no more on the subject. Having carefully examined a number of the Laughing Geese, and found much difference in colouring between the old and young birds, although measuring the same size, or nearly so, I am inclined to doubt the new species *Anser frontalis* of Baird, described from specimens from Red River Settlement and Fort Thorn. Besides, Mr. Barnston does not seem to have any suspicion of a second species; and I never heard the Indians mention anything about one. A specimen of *A. gambelii*, which I received from Hudson's Bay, is now in the Museum of the Royal Artillery Institution at Woolwich, where, I may state, an application either to the Secretary or to Mr. H. Whitely, of 28 Wellington Street, will gain any naturalist ready admission to examine my specimens.

105. BERNICLA CANADENSIS.

This is the "Common Grey Goose" of the fur-traders and voyageurs of the territories of the Hudson's Bay Company. Its range in that country extends from Hudson's Bay to the Rocky Mountains and the Arctic coast, as decided by specimens from various localities. It is the earliest of the Geese in spring. At Fort Carlton the first seen in 1858 was on the 28th of March, and at Red River Settlement on the 1st of April, while in 1856 it was on the 2nd, but in 1859, which was a very backward spring, it was much later. At Fort Carlton there were numbers at the lakes on the plains as late as the 3rd of November. It is not restricted in its breeding-ground to the far north; for I found four eggs in a nest between the north and south branches of the Saskatchawan on the 4th of May. I have before noticed the habit ('Ibis,' vol. iii. p. 319) of adopting the deserted nests of Eagles or Ravens, also mentioned in the 'Fauna Bor.-Am.,' having learned it from unquestionable authority. I have been also *told* that the birds in their first year do not breed, but remain in flocks, and can readily be distinguished by their smaller size; the last part of the sentence I am, however, inclined to doubt. With respect to the length of *B. canadensis*, I believe 36 inches to be quite up to the average for an adult. Prof. Baird gives 35 to 37, and Wilson 36 inches. I have measured many in the wild state, and never found them to deviate much. The 'Fauna Bor.-Am.' has, however, given 41 inches; and this has, unluckily, been copied by Yarrell, and is therefore recognized as the proper length. Mr. Murray, moreover, makes the two he has compared 39½ and 40 inches respectively, which, although he does not tell us so, I suspect are the measurements of skins, and consequently worthless. My specimen ('Ibis,' vol. iv. p. 9), which was a female, measured 34 in. in length, 19¼ in. in the wing, 2⅛ in. along the culmen of the bill, and the commissure 2¼ in.; bill, legs, feet, and claws wholly black; the folded wings reached just to the end of the tail, and the upper tail-coverts 3½ in. short of it. There are some large specimens in the British Museum, from North America, one of which measured 20½ in. in the wing, and 2⅜ in. along the ridge of the bill; in colouring it does not differ from the typical *B. canadensis*. Among some skins brought home, this last autumn, from Hudson's Bay, by Capt. Herd, is a pied variety of this species. Its legs were probably, when fresh, a red flesh; the bill is part black and part yellow, and the dark plumage has a large admixture of white; but what establishes it as an accidental variety is, that the number of white quill-feathers is unequal in the two wings, and there are five white tail-feathers on one side, and eight on the other.

BERNICLA HUTCHINSII.

This, I suppose, we must allow as a species, as Prof. Baird places a specimen from Red River Settlement under the name, while Mr. Murray records it from Hudson's Bay, and Mr. Ross from the Mackenzie, where he found it breeding. Mr. Barnston remarks on their late arrival in spring ('Ibis,' vol. ii. p. 255), and mentions that they go north in distinct flocks. This seems to agree with my informant, mentioned in the foregoing paragraph, who may have mistaken the species. I measured an individual on the Lower Saskatchawan in September, which, although I was assured by an Indian it was the young of *B. canadensis*, I took to be *B. hutchinsii*: it was 27½ in. in total length; 16½ in. in the wing; bill along the ridge 1½ in.; upper tail-coverts from the end of the tail, 2½ in.; nail of the upper mandible dark brown, lower horn-colour; bill, legs, and feet black, when fresh, but became lighter some time after death. Also another at Fort Carlton, late in May, measured 27½ in. and 14¼ in., and bill 1½ in.: it was a female; but none of the ova showed any appearance of developing.

I cannot include Mr. Cassin's Pacific bird *B. leucopareia* in this paper, which treats only of such as are found on the eastern side of the Rocky Mountains.

Bernicla barnstonii? (Ross).

"This bird was shot at Fort Simpson (on the Mackenzie). It is of very large size, with the breast of a bright fawn-colour. The delta of feathers running up into the lower mandible is white, instead of black, as in *B. canadensis*. The tail is of sixteen feathers. The Indians consider it a distinct species from the Canada Goose. It seldom flies in parties of more than five or six." (Bernard Ross, 'Nat. Hist. Rev.' July 1862, p. 28). It is with much gratification that I am able to transcribe the above notice of this new and large species of Goose; for, during the latter part of my stay in the northern interior of the American continent, I became convinced that such a bird existed, and made known my belief, both by letter to my friend Mr. George Lawrence, of New York, and also to Prof. Baird and Mr. Cassin, when I visited Washington and Philadelphia in the spring of 1859. This conviction, however, was not founded on any specimen seen, but from the verbal evidence gained from the traders and Indians of the country. No one could have been more loth to believe in a "Large Goose" than myself, because I always fancy that, if any bird is shot, it is sure to be a very large or particularly small one, so many persons being in the habit of making molehills into mountains in the sporting way; but still I was assured so frequently, by those who could have no interest in intentionally deceiving me, of the existence of this "Large Goose," that had I obtained it I intended to have named it *major*; I am delighted to find, however, that Mr. Ross has dedicated it to our mutual friend and zealous naturalist, Mr. George Barnston. These reports, moreover, exactly agree with Mr. Ross's observations of its associating only in small flocks, and being "yellow" (as the Indians said) on the breast. By some it was called the "Barren Goose."

In concluding my remarks on the *Berniclæ* of Northern America, I may add that one Indian on the Saskatchawan testified to four kinds of Grey Geese (all those similar to the Canada Goose are called Grey Geese), which he specified as follows:—1, the Large Goose; 2, the Common Grey Goose; 3, the Short-necked Goose; and 4, the Small Goose. No. 1 is now known as *B. barnstonii*; No. 2 is *B. canadensis*; and No. 4, *B. hutchinsii*; but No. 3 (which, however, I never heard of from any other source) cannot be accounted for by any species yet known to naturalists. Moreover I should remark that Mr. Andrew Murray has described ('Edin. New Phil. Journal,' April 1859, p. 226) a Goose, which he considers distinct from *B. canadensis*, under the name of *B. leucolæma*, which he received "from Hudson's Bay." In colour and markings I should suppose it to be Mr. Ross's *B. barnstonii*; but the table of comparative measurements (if we except the total length, which appears to be of the *skin*) agrees so nearly with those of *B. canadensis* that I cannot see how it is to be distinguished by greater size. I reiterate that the average length of the Canada Goose is about 36 inches; therefore, if any one can secure a specimen measuring even 40 in. before skinning, I think he will have hit upon the Large Goose—call it *barnstonii* or *leucolæma*. The North American Geese are, however, in a "very hazy condition," to use Mr. Ross's words, who, writing from Mackenzie River, in a letter dated June 1, 1862 (which Mr. Murray has kindly allowed me the perusal of), remarks on the subject thus:—"As to the specific arrangement of the *Berniclæ*, the more I study the matter, the greater appears the uncertainty. My opinion is, that either the *B. canadensis, leucomelia* [sic], *barnstonii, hutchinsii, parvipes, leucopareia* are only varieties, or else that more species will be required than those named above. The number of tail-feathers does not, I consider, form a specific distinction of any great value." He then adduces some instances of discrepancies in this way, and concludes by saying, that, although he has obtained a second specimen of *B. barnstonii*, which measured 38 inches in length and 19 inches in the wing, and, besides the bright fawn-colour waved with lavender, had "the confluence of the white cheek-patches under the throat extended to the rami of the lower jaw, and there were two white spots over as well as under the eyes," while its back was of a darker shade than the typical *B. canadensis*, yet he is doubtful of its specific identity. I have consequently placed a mark of interrogation against the specific name.

BERNICLA BRENTA.

This, I believe, is quite an Eastern American bird. The 'Fauna Bor.-Am.' gives the habitat as the coasts and islands of Hudson's Bay and the Arctic Sea; and I have received a specimen from Hudson's Bay myself. Mr. Barnston ('Ibis,' vol. ii. p. 255) considers it a salt-water bird. The Black Brant (*B. nigricans*) takes its place on the Pacific shore, which Mr. Ross, from information he has received, thinks may be found on the Yukon River, which drains the opposite slope of the Rocky Mountains to the Mackenzie.

106. ANAS BOSCHAS.

Besides my specimens ('Ibis,' vol. iv. p. 9) from the Saskatchawan, I have received the Mallard from Hudson's Bay; and it is a common bird throughout the interior, where it is known as the "Stock-Duck." Mr. Ross notes it on the Mackenzie, common to the Arctic coast.

ANAS OBSCURA.

The Dusky Duck belongs especially to the eastern seaboard of North America; but I have received a specimen, and seen others, from York Factory, on Hudson's Bay, which is the first notice of it, I believe, from that locality.

107. DAFILA ACUTA.

The Pintail inhabits the Saskatchawan ('Ibis,' vol. iv. p. 9) and Red River to Hudson's Bay. It is also given on the Mackenzie by Mr. Bernard Ross. A male specimen, which has lately come from Hudson's Bay, has the whole of its white neck, breast, and belly, as well as the fore part of the face and head, strongly tinged with rust-colour, just as if it had inhabited water holding iron in solution. Now this, in the Swans, has been taken as a sign of youth; but I am joined by others in considering the case open to doubt. In Snow-Geese this rustiness is common; and it is very usual to find it on the white fronts of the Laughing Goose, even in very adult birds.

108. NETTION CAROLINENSE.

Specimens from the Saskatchawan ('Ibis,' vol. iv. p. 9) and Hudson's Bay. Common also on the Mackenzie to the Arctic Circle.

109. QUERQUEDULA DISCORS. (See 'Ibis,' vol. iv. p. 9.)

Specimens from the Saskatchawan ('Fauna Bor.-Am.') and from Slave Lake (Bernard Ross).

110. SPATULA CLYPEATA.

Specimens from the Saskatchawan ('Ibis,' vol. iv. p. 9) and Hudson's Bay; also from Great Bear Lake ('Fauna Bor.-Am.') and the Arctic Circle, on the Mackenzie (Bernard Ross).

CHAULELASMUS STREPERUS.

The Gadwall was seen and examined on the Saskatchawan by myself; and a specimen is recorded thence in the 'Fauna Bor.-Am.' I have, moreover, seen a specimen from Hudson's Bay.

MARECA AMERICANA.

The American Widgeon is common on the Saskatchawan, where I shot it. The Smithsonian Institution has a specimen from between Lake Winipeg and Hudson's Bay; and Mr. Murray records it from the last locality, whence I have also seen it; and Mr. Ross notices it as common on the Mackenzie.

AIX SPONSA.

A specimen of the Summer- or Wood-Duck is recorded in the 'Fauna Bor.-Am.' as killed on the Lower Saskatchawan; and Mr. Murray mentions specimens from the west side of Hudson's Bay.

FULIX MARILA.

A male from the Saskatchawan is recorded in the 'Fauna Bor.-Am.,' and there is a specimen in the Smithsonian Institution from Red River Settlement. Besides, Mr. Ross records the "Big Black-head," as it is called in America, on Great Slave Lake. I have examined several specimens sent from Hudson's Bay, and they differ from a good adult bird, killed in England, in having the black and white markings on the back of a coarser nature, the almost entire absence of the fine speckling on the shoulders of the wings, the scapulars without any markings, and the black of the region of the vent does not run so far up on the belly. These peculiarities may be simply due to age; but having noticed them, I feel bound to record them. The too common error of those drawing up local lists, of making species in order to swell their *special* fauna in point of number, I am well aware of, and have taken care to guard against it. I am one, however, who believes that it is better to recognize a rather doubtful species than introduce varieties (except accidental) into ornithology; for I am persuaded, if once such a system is commenced, the science will become divested of much of its interest, and we shall not get men to sacrifice their comfort, and perhaps risk their lives, in collecting abroad, if, when they return home, their species are to be called merely varieties.

FULIX AFFINIS.

There is a specimen of the American Scaup in the Smithsonian Institution from Nelson River; Mr. Murray gives it from Hudson's Bay, whence I have also received specimens; and on the Saskatchawan I shot one or other of these two species, but was uncertain which. Mr. Ross mentions *F. affinis* as abundant on on the Mackenzie to the Arctic Circle.

FULIX COLLARIS.

Specimen from the Saskatchawan ('Fauna Bor.-Am.'), under the name of *Fuligula rufitorques*, and from Fort Simpson, on the Mackenzie.

111. AYTHYA VALLISNERIA.

My specimen, from Fort Carlton ('Ibis,' vol. iv. p. 10), is referred to the Canvas-back; and in the 'Fauna Bor.-Am.' one is also given from the Saskatchawan. The Pochard is also mentioned in that work, but there is no note of the locality of a specimen. Mr. Ross does not note *A. vallisneria* north of Great Slave Lake.

112. BUCEPHALA AMERICANA.

First seen at Fort Carlton in the spring, on the 10th of April ('Ibis,' vol. iv. p. 10); specimens also from Hudson's Bay. Included in the 'Fauna Bor.-Am.' as *Clangula vulgaris*. Mr. Ross notes the Golden-Eye on the Mackenzie to the Arctic Coast. One distinctive mark given between this and the following species is the absence of a black band across the white of the wing. Mr. Yarrell, however, figures both male and female with this line quite distinct; and if this is constant in European specimens, it is a good distinction between *C. vulgaris* and *C. americana*. There is a male specimen, however, in the British Museum, from Nova Scotia, which has the black band on the wing very distinct.

BUCEPHALA ISLANDICA.

Described in the 'Fauna Bor.-Am.,' from a specimen killed in the Rocky Mountains, as *Clangula barrovii*. This specimen is now in the Museum of the Smithsonian Institution at Washington.

113. BUCEPHALA ALBEOLA.

Specimen from the Saskatchawan ('Ibis,' vol. iv. p. 10) and Hudson's Bay. Mr. Ross gives it abundant on the Mackenzie, to its mouth.

HISTRIONICUS TORQUATUS.

I examined a specimen of the Harlequin Duck at York Factory, on Hudson's Bay; and the 'Fauna Bor.-Am.' records one from the eastern declivity of the Rocky Mountains. Mr. Ross mentions it on the Mackenzie.

HARELDA GLACIALIS.

A specimen is noted in the 'Fauna Bor.-Am.' from the Saskatchawan; and Mr. Murray records it from Hudson's Bay, where I myself saw it, and whence I have since received specimens. Mr. Ross also gives the Long-tailed Duck, or "South Southerly," as abundant on the Mackenzie.

MELANETTA VELVETINA.

I have seen and examined the American Velvet Scoter from Hudson's Bay; Mr. Murray records it from the country between there and Lake Winipeg; and Mr. Ross includes it among the birds of Mackenzie River. The 'Fauna Bor.-Am.' gives *Oidemia fusca,* the European bird, from Great Bear Lake; but although this may have been a mistake, owing to *M. velvetina* not being then known as distinct, still I think *M. fusca* is sometimes found on the west side of the Atlantic, as there is a specimen in the British Museum, presented by the Hudson's Bay Company. I may here state, with regard to the geographical range of *M. velvetina,* that I have a specimen, which has been carefully compared, shot by myself at Chin-Kiang, on the Yang-tsze River, in China. This bird is also found on the Pacific coast of North America. I would also remind observers that its striking dissimilarity to *M. fusca* is in the form and colouring of the bill, which comes nearer to the Common Scoter (*Oidemia nigra*) of Britain.

PELIONETTA PERSPICILLATA.

I have received a specimen of the Surf Scoter from York Factory, on Hudson's Bay, from which locality Mr. Murray has obtained it; besides, there is one from Nelson River in the Smithsonian Institution, and another is recorded from Great Bear Lake in the 'Fauna Bor.-Am.;' it is also given as abundant, by Mr. Ross, on the Mackenzie.

OIDEMIA AMERICANA.

The American Scoter was described by Swainson, from Hudson's Bay, in the 'Fauna Bor.-Am.;' and both Mr. Murray and myself have received specimens from the west coast of Hudson's Bay.

SOMATERIA MOLLISSIMA.

I have received from Hudson's Bay fine specimens of the Common Eider.

SOMATERIA V-NIGRUM.

This species of Eider, hitherto found only on the Pacific, is recorded by Mr. Ross as an inhabitant of Great Slave Lake, in latitude 61° N., and longitude 114° W. It is said to be rare in that locality, only two specimens having been obtained. This is another instance of the occurrence of the fauna of the Pacific in this northern and western region, which I have before adverted to. After all, it is nothing more than what we should expect; for on observing the configuration of the north-western part of the American continent, it is only natural that the birds wintering about Vancouver Island and to the southward should find their way, in summer, across the small portion of continent intervening between them and the Arctic Ocean, in place of making their way as far westward as Behring's Strait. There is another Eider (although it is placed in another genus), belonging to the American continent, *Arctonetta fischeri*, likewise described by Mr. George Gray, from specimens from Norton Sound, in Russian America*.

SOMATERIA SPECTABILIS.

The King Eider is noticed from the Arctic regions in the 'Fauna Bor.-Am.'; and I have seen specimens from Hudson's Bay.

ERISMATURA RUBIDA.

A specimen is given in the 'Fauna Bor.-Am.' from the Saskatchawan; and I examined one at York Factory, on Hudson's Bay. Mr. Ross records it as an inhabitant of Great Slave Lake.

114. MERGUS AMERICANUS.

I found the American Goosander as far west as the Rocky Mountains ('Ibis,' vol. iv. p. 10), and have seen a specimen from Hudson's Bay. It is given in the 'Fauna Bor.-Am.' as *M. merganser*.

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* See Proc. Zool. Soc. 1855, p. 211.

MERGUS SERRATOR.

Mr. Murray and myself have both received the Red-breasted Merganser from Hudson's Bay. It is recorded in the 'Fauna Bor.-Am.' from the Saskatchawan, and by Mr. Ross as common on the Mackenzie.

LOPHODYTES CUCULLATUS.

The Hooded Merganser is also given in the 'Fauna Bor.-Am.' from the Saskatchawan; and Mr. Murray records it from Hudson's Bay, whence I have also seen it: Mr. Ross also records its occurrence on the Mackenzie.

PELECANUS ERYTHRORHYNCHUS.

The American Pelican, recorded from English River in the 'Fauna Bor.-Am.,' and seen by me on the Saskatchawan, has been supposed not to range east of Lake Winipeg; but Mr. Murray has recorded a specimen from Hudson's Bay. This is, however, only the locality from which he received it; and he informs me he cannot say where the bird was killed. The Grand Rapid, at the mouth of the Saskatchawan, is a favourite resort for numbers of Pelicans; and Mr. Ross notices them as frequenting the Mackenzie.

GRACULUS DILOPHUS.

A specimen of the Double-crested Cormorant, from which the species was described by Swainson in the 'Fauna Bor.-Am.,' was killed on the Saskatchawan. Cormorants are at times common on that river, but whether they are all of this species remains for future ornithological explorers to determine. *G. dilophus* is mentioned by Mr. Ross at Great Slave Lake, but no other species.

Although I observed species of Petrels, Shearwaters, and Skaws on my voyage from England through Hudson's Straits to Hudson's Bay, I cannot include them among the birds of the interior of British North America; however, the following species of the genus *Stercorarius* are on good authorities.

STERCORARIUS CATARRACTES.

Mackenzie River (Bernard Ross).

STERCORARIUS POMARINUS.

Mackenzie River (Bernard Ross). Hudson's Bay ('Fauna Bor.-Am.').

STERCORARIUS PARASITICUS.

Mackenzie River (Bernard Ross).

Var. *richardsonii*, Mackenzie River (Bernard Ross & 'Fauna Bor.-Am.'). I have also received a specimen of Richardson's Skaw, from Hudson's Bay.

STERCORARIUS CEPPHUS.

I have received from Hudson's Bay two specimens of Buffon's Skaw, whence Mr. Murray also notes it, and Mr. Ross from Mackenzie River.

LARUS GLAUCUS.

I have seen a specimen among some skins from Hudson's Bay; the wing measured 16½ inches.

LARUS GLAUCESCENS.

Mackenzie River (Bernard Ross).

115. LARUS ARGENTATUS.

Besides my specimen ('Ibis,' vol. iv. p. 10), killed at York Factory, on Hudson's Bay, Mr. Murray also records the Herring Gull from Severn House, a little further south. Besides these, there is a specimen in the Smithsonian Institution from Nelson River; and Mr. Bernard Ross records it from the Mackenzie.

LARUS CALIFORNICUS.

Mackenzie River (Bernard Ross).

116. LARUS DELAWARENSIS.

The Ring-billed Gull, given in the 'Fauna Bor.-Am.' under (according to Lawrence, in Baird's Report) the various names of *canus*, *zonorhynchus*, and *brachyrhynchus*, is an inhabitant of the Saskatchawan, on the lower part of which river my specimen ('Ibis,' vol. iv. p. 10) was obtained. Mr. Murray also gives what he calls a variety of *L. zonorhynchus* from Hudson's Bay. Mr. Ross, I find, in a list brought up to June 1862, gives a Gull under the name of *L. brachyrhynchus*, and another *Larus*, name unknown, also *Blasipus heermanni*.

117. CHROICOCEPHALUS FRANKLINII.

Franklin's Rosy Gull, described from the Saskatchawan, was found by myself ('Ibis,' vol. iv. p. 10) to be common on the lakes of the buffalo-plains in summer, where it breeds.

118. CHROICOCEPHALUS PHILADELPHIA.

Bonaparte's Gull, under the name of *bonapartii*, is given in the 'Fauna Bor.-Am.,' and by Mr. Bernard Ross, from Mackenzie River. I found it in great numbers at the mouth of Hayes River, on the west coast of Hudson's Bay ('Ibis,' vol. iv. p. 10). Mr. Murray also gives it from the same coast; and the Smithsonian Institution contains one from Nelson River.

RISSA TRIDACTYLA.

Interior and Hudson's Bay ('Fauna Bor.-Am.').

RISSA SEPTENTRIONALIS.

Mackenzie River (Bernard Ross).

PAGOPHILA EBURNEA.

Hudson's Bay ('Fauna Bor.-Am.').

STERNA CASPIA.

Mackenzie River (Bernard Ross).

STERNA WILSONII.

Mackenzie River (Bernard Ross). Specimen from Nelson River in Smithsonian Institution.

STERNA MACROURA.

I received a specimen of the American Arctic Tern from my friend Mr. J. R. Clare, in charge of York Factory, Hudson's Bay. Mr. Bernard Ross gives it on Great Bear Lake. The 'Fauna Bor.-Am.' mentions it under the name of *S. arctica*, as also does Mr. Murray, from Hudson's Bay.

STERNA FORSTERI.

The 'Fauna Bor.-Am.' gives *S. hirundo* from the Saskatchawan, which in Professor Baird's Report is referred to this species. Mr. Murray also notes *S. hirundo* from Hudson's Bay.

119. HYDROCHELIDON PLUMBEA.

My specimen ('Ibis,' vol. iv. p. 10), as well as one called in the 'Fauna Bor.-Am.' *Sterna nigra*, are from the Saskatchawan;

and Mr. Bernard Ross records it at Mackenzie River. Mr. Murray has given *Sterna nigra* (Linn.) from Hudson's Bay.

COLYMBUS TORQUATUS.

Common throughout the interior in the summer season, but most frequently found on lakes. Specimens from Mackenzie River (Bernard Ross & 'Fauna Bor.-Am.') and Hudson's Bay (Murray).

COLYMBUS ARCTICUS.

The Black-throated Diver is given by Mr. Murray from Hudson's Bay, and also recorded in the 'Fauna Bor.-Am.' from thence; I have also seen specimens. Mr. Bernard Ross mentions the variety *pacifica* as occurring sparingly on Mackenzie River. He also gives *Colymbus adamsii*, G. R. Gray, which he states occurs in numbers on Great Slave Lake.

COLYMBUS SEPTENTRIONALIS.

Hudson's Bay ('Fauna Bor.-Am.'). Mackenzie River (Bernard Ross). I have also seen specimens from Hudson's Bay.

PODICEPS GRISEIGENA.

Red River Settlement (Smithsonian Institution). Mackenzie River ('Fauna Bor.-Am.' & Bernard Ross).

PODICEPS CRISTATUS.

Saskatchawan River ('Fauna Bor.-Am.').

120. PODICEPS CORNUTUS.

Specimens from Mackenzie River recorded by Mr. Bernard Ross and in the 'Fauna Bor.-Am.,' from between Hudson's Bay and Lake Winipeg by Mr. Murray, a specimen in the Smithsonian Institution, collected by Mr. Kennicott on the Red River of the North, and my own ('Ibis,' vol. iv. p. 10) from the Saskatchawan Plains and Hudson's Bay, show the Horned Grebe to be widely distributed in the interior.

PODICEPS AURITUS.

Mackenzie River (Bernard Ross).

PODILYMBUS PODICEPS.

Mackenzie River (Bernard Ross & 'Fauna Bor.-Am.').

URIA GRYLLE.

Mr. Murray records the Black Guillemot, with a slight peculiarity, from Hudson's Bay; it is also mentioned in the 'Fauna Bor.-Am.;' besides, I observed it in Hudson's Straits, but that locality does not come within the range of this paper. And I may here observe that the fact of not embracing the eastern Arctic lands prevents my including more than one other of the species of Guillemots (as is the case also with the *Laridæ*) given in the 'Fauna Bor.-Am.,' which is

URIA LOMVIA, the Foolish Guillemot, given under the name of *U. troile*, from York Factory, on the western coast of Hudson's Bay.

Thus I bring to an end a list which, although it does not carry on its face a circular note of credit to general ornithologists, yet, from the labour bestowed upon it, may, I hope, prove useful to future inquirers on North American birds. To say that I am aware of its defects would be to criminate myself, because it might be in justice remarked, why did not I rectify them? I will therefore observe that I have drawn from every reliable authority within my reach, but have never given the information so gained as if it were my own, the scantiness of which is, I am afraid, too apparent. When remarking on my own labours in the field, I would ask the reader to bear in mind that, as a member of a Government Exploring Expedition, my duties were widely different from those of a zoologist; in fact, I had properly nothing to do with natural history, my work being of a nature which required the use of the sextant more than the fowling-piece, the pen and pencil instead of the dissecting-knife, and observations of the movements of magnets rather than of birds. It was consequently only spare moments at uncertain times that I was able to devote to my favourite pursuit, ornithology; while the putting together of these notes has been done at a period when memory cannot serve me. I will therefore conclude with the simple request that if any censoriously inclined naturalist meditate severe criticism, he will be guided by the memorable advice of 'Punch'—questionable perhaps in the case in which it was offered, but often so very appropriate—"Don't!"

London, November 1862.

XIII.—*Notes on the Birds of Egypt.* By S. STAFFORD ALLEN.

[Continued from p. 34.]

5. THE SPUR-WINGED PLOVER (*Hoplopterus spinosus*).

The Spur-winged Plover, curious and interesting as it may be in its habits to an unconcerned spectator, is anything but a favourite with the sportsman; for to its vigilance and noisy activity he probably owes the loss of many a good bird that might otherwise have been added to his bag. Woe to the unlucky ornithologist who, in attempting to get within shot of some scarce and shy bird, happens to come across one of these mischief-makers! for, as if equally aware of his intentions and its own worthlessness, it hovers over his head, jerking out its warning cry of "Zac! zac! zac!" until every bird is effectually scared away from the vicinity. Constantly, whilst thus employed, does it pay the penalty of its interference, by receiving the charge intended for its betters, from which it would otherwise have been perfectly safe. Abundantly distributed over the country, and not at all shy, the "Zic-zac" (as the Arabs call it) is seen in pairs or small flocks, both by the river-side and in the fields, its strongly contrasted black-and-white neck, with the more sober dun of its back, attracting the attention of the most careless observer as it stands with a knowing air on the top of a ridge or hillock, ready to give notice of anything suspicious. The sharp spurs which are placed on the carpal joint of each wing are not worn merely for ornament; for these Plovers are most pugnacious birds, and know how to use these weapons with effect in their frequent battles among themselves, or with their "pet aversion" the Hooded Crow (*Corvus cornix*). This spur is mostly used whilst on the wing, by darting at the object of their dislike and making a sudden turn upwards on reaching it, striking at the same time. I am inclined to think, however, that it is occasionally used on the ground, as I have several times seen a Zic-zac put down its head and run at another in a threatening manner, though I never saw a blow actually struck. The spurs are often quite worn down, perhaps through the frequency of these encounters, which are said by the natives to be occasionally attended with fatal consequences.

A curious habit of the Zic-zac (though not confined to this species, as I have noticed it in several other Waders) is that of suddenly jerking up its body whilst on the ground, sometimes emitting its cry of "Zac!" at the same time—in fact, looking exactly as if afflicted with a violent hiccup.

The flight of the Spur-winged Plover is strong and vigorous, and partakes of the same jerky and energetic character which distinguishes this species in all its movements.

This bird feeds principally upon small aquatic insects and mollusks, and, as is usual in birds whose food is of this character (and, indeed, in many others), the stomach always contains, in addition, a number of stones to assist digestion.

The irides are deep red; the beak, feet, and legs black. The sexes are alike in plumage, the male being slightly the larger of the two.

I did not find the nest of the Spur-winged Plover; and although some eggs of this species were brought to me at Damietta, they were so mixed up with those of *Himantopus melanopterus* as to prevent my feeling any degree of certainty with regard to them. Several of them correspond with the figure given by Dr. Bree in his 'Birds of Europe;' but I am hoping, in an approaching campaign in Egypt, to be more successful in obtaining authentic specimens.

[To be continued.]

XIV.—*An Ornithological Letter from Mentone.*

By J. Traherne Moggridge.

To the Editor of 'The Ibis.'

Villa Laurenti, Mentone,
Alpes Maritimes, France, Nov. 28.

Sir,—I now take advantage of your kind offer of listening to the accounts I might send you of birds from time to time. I hope that, though such accounts are of necessity desultory and disconnected, there may yet be some facts gathered from them ultimately. The day after I had the pleasure of seeing you in London I left England, and the next day found us in Paris. On

Oct. 12, when paying a first visit to the Jardin des Plantes, after I had partially swallowed the disappointment and wonderment caused me by the vast attention paid to cocks and hens and *les Canards d'Aylesbury*, my step was arrested in front of a cage tenanted by a white variety of the Common Jay (*Garrulus glandarius*), the bird being entirely white as to plumage, having dark eyes, while its beak, tarsi, and feet were flesh-colour. On seeing this bird, I instantly recollected a pair of White Starlings (variety of *Sturnus vulgaris*) which I had the opportunity of seeing in a cage last summer. They had been taken near Swansea, in a pigeon-house, one hole of which the parent birds had usurped, and there tended these, their offspring, in company with two others of the ordinary dusky hue. Now, these White Starlings were likewise entirely white, having dark eyes, with beak, tarsi, and feet flesh-colour. Is it fair to attempt to draw the inference from the two cases that the tendency to become albino among birds is expressed rather by the pinkish colour of the extremities than of the eyes?

From Paris we gained the south without making any note worth reporting, the birds being even fewer than usual because of the absence of the Royston Crow (*Corvus cornix*), which was not then in France. When toiling over the Turbith Mountain, lying between Nice and Mentone, I saw the handsome Black Wheatear flitting from place to place among the rugged torrents of stone that lie in the hollows of the mountain, his black dress relieved by his white tail and tail-coverts. His sprightly manners and his love for the highest point of the highest stone reminded me strongly of our own *Saxicola œnanthe*, which he also resembled in size. I am quite unable to say whether I should call him *Saxicola cachinnans* or *S. stapazina*, as the males of both of these species are at this season remarkably alike in colouring. After this, we had not gone far before Mentone appeared in view—a compact town gathered on a promontory which, running a short way into the sea, suffices to divide the main bay into eastern and western bays, while a grand amphitheatre of rocky mountains protects from the northerly winds the entire sweep, as the range rises for the most part from the sea-level. The slopes nearest the sea are devoted to lemons, oranges, olives; and as these trees are being constantly tended, the safe nesting of birds where they abound is nearly frustrated; there are, however, fir woods in the western bay, and here and there a few copses of other trees are found, in which even the Blackbird might find a thicket to his fancy. Both Mentone and its neighbourhood are destitute of lagoons, of pools, of marshes, of rivers; the torrents that now and then sweep down the mountain-sides are too soon gone to supply the deficiency. There is no ebb in the sea here, no sand, no long bare reaches of wild ground—bare through the influence of the sea; the sea-birds, therefore, obtain their living entirely from the sea itself, as there is no soft sand or mud where they might find worms or mollusks.

On Oct. 21st I found myself established at Mentone, with leisure to ramble, and having a great wish to ascertain the names of some of the birds which lured me on by their voices among the olives. After a morning spent among the trees, and an afternoon among the rocks, the following results were obtained. Morning:—Gold-crest and Fire-crest Wrens (*Reguli cristatus* and *ignicapillus*), which will stay with us all the winter; the Wood-Wren (*Phyllopneuste sylvicola*), about whose movements I am still in doubt; the Black-cap, male and female (*Sylvia atricapilla*), which does not stay the winter. Afternoon: —the Blue Rock-Thrush (*Petrocincla cyanea*), staying all the year at Mentone, as do the two following—the Black Redstart (*Ruticilla tithys*) and the Rock-Martin (*Hirundo rupestris*). With regard to the two last-named birds, I cannot help thinking it worth remarking that they, though generally accounted true migrators, should be content to forego their natural propensities, and thus establish themselves permanently as residents of Mentone. The Black Redstart is only an occasional visitor to England; the Rock-Martin has never been found in our island: yet these birds, or rather these individual examples of these species, are not so sensitive to the approach of winter as the common Redstart (*Ruticilla phœnicura*), the Swallow, Swift, and many others, which are, notwithstanding, constant spring-visitors to Great Britain. *Hirundo rupestris* is the only member of the Swallow tribe that winters at Mentone; and I may count myself fortunate that I have had the opportunity of observing it, as Prof. Savi, in his 'Ornitologia Toscana,' mentions it as a bird of rare occurrence there.

Within a quarter of an hour's walk from our house is the frontier-bridge of Pont St. Louis. One might, from the name, expect to find a river flowing under the arch, and forming the actual line of demarcation, or at least the stony bed where a river might at times be supposed to flow; but no; precipitous rocks, forming the sides of a fine gorge, are the real defences, and the bridge is simply the means of bringing the cornice road across its rugged mouth at the height of about 100 feet. Here rock-loving birds find every requisite for their varied needs. The Wall-creeper (*Tichodroma phœnicoptera*) enjoys the perpendicular faces of rock in the crannies of which abound the spiders and larvæ which it loves to probe after with its long bill. The Rock-Martin (*Hirundo rupestris*) sweeps gracefully around the sheltered bays, where, in the coldest weather, it may find gnats and other ephemera. The Blue Rock-Thrush (*Petrocincla cyanea*) seeks the lonely points of inaccessible pillars of rock from which he can guard warily against surprise; and the Black Redstart (*Ruticilla tithys*) leads a merry life among the loose drifts of stones and the briary tangles of the lower hollows. The Rock-creeper (*Tichodroma phœnicoptera*), with the crimson-and-white spotted wing, is fortunately a bird specially exposed to the scrutiny of the observer, his love of exposed surfaces of rock, and his antipathy to long flights, allowing us even hours of undisturbed examination. When seen flying, the impression conveyed us is of a bat rather than a bird, the stroke of its wing being spasmodic and laborious; for this reason it soon approaches the rocks, to which it applies itself as a fly might to the wall of a room, and working up the surface by means of vertical *jumps* (the wing being scarcely unfolded), in that way traverses spaces of from 10 to 14 inches. It was not until I had a specimen in my hand that I could understand how a body starting parallel with the rock could be propelled upwards, contrary to the laws of gravity. The apparatus is indeed remarkable, consisting of the following:—a short strong tarsus; three toes directed *forward*, having claws hooked for grappling—the central of these three measuring $\frac{9}{10}$ths of an inch, including its curved nail; and lastly, one toe directed backwards, which somewhat resembles that of the Lark, measuring altogether $1\frac{2}{5}$ inch, and the nail alone $\frac{7}{10}$ths of an inch. The three anterior claws are, then, *the instruments of attachment*; and the vertical transits are chiefly made by means of the long posterior claw, the impetus being given by the shortening of some tendon, which causes it to approach the three anterior, while its whole length acts as a lever against the rock; and thus the start is made.

I have so far attempted to explain what is to me the most interesting habit of the *Tichodroma,* and I have perhaps been somewhat too bold in defining it solely on my own authority. The attempt is the result of five months' careful study of the point, and is given here because I know that it is the belief of many observers that the bird *flits* up from stage to stage, using the wings as the principal motive power. I deny this supposition, for two reasons,—firstly, because the *Tichodroma* is furnished with feet beautifully adapted for this very purpose; and secondly, because the wing is, during these *trajets,* so slightly expanded that it could not even support the weight of the body, much less propel it against the powerful influence of its own specific weight. The *Tichodroma,* when seen alive and in its natural haunts, cannot be minutely described. Unless we use a very powerful glass, we are unable, for instance, to get much idea of the beak and legs, the general idea conveyed being of a bird something like a Nuthatch, with grey body and dark wings, on the upper parts of which predominates fine crimson colour, and lower down are two rows of circular white spots. So much we get from casual observation.

But, beside having a wonderful foot, the bird has also a wonderful beak—an instrument as well suited to the search in the cracks of the rock as is the bill of the Dunlin for probing after worms in the soft mud. While talking about this bill, I must mention a curious fact, stated by M. Bailly in his 'Ornithologie de la Savoie,' where he says, "The *Tichodroma* varies most of all in the size of its beak; it is not rare to find, as in the Hoopoe and Creepers, some individuals even of mature age in which this organ may be from $\frac{3}{10}$ths to $\frac{7}{10}$ths of an inch longer ('soit de 9–15 millim. plus long') than in the greater part of their congeners." In the specimen I have, it measures exactly 1½ inch in length, is very narrow, and slightly arched.

I must now check my loquacity on this, my favourite topic, and say a word, while I have yet time, about the Blue Rock-Thrush, of lonely habit. Most people who have seen and noticed this bird have heard repeated what Waterton says when he claims that it is the representative of the Sparrow of the Psalms; and they have been probably gratified, as I was, at the realization of this their childhood's type of desolation. The French and the Italians, who are acquainted with the bird, have each a name curiously correspondent with the Bible appellation,—the lower orders in France calling it " Le Merle ou Moineau Bleu," those speaking the patois of Savoy " Passeraz Solistero Blu," and the Italians " Passera Solitaria " —all three preserving the word signifying Sparrow. Many kinds of berries, such as those of the arbutus, the juniper, the pretty scarlet smilax, and perhaps an occasional fig, suffer the depredations of all Thrushes, and of the Blue Rock-Thrush doubtless among the rest; but I fancy that his special taste is for spiders, larvæ, and things creeping innumerable, as the rocks where he most of all delights to dwell are not the habitats of the fruits above named. Perhaps the grasshoppers, with their gauzy pink, blue, or green wings, may now and then fall victims to his appetite; and even the great brown locusts and thorny-armed green *Mantides* may dread the " Solitary Sparrow."

Having thus far given some general idea of the birds with which I may now say that I am in daily intercourse, I should be unpardonable if I neglected, in conclusion, to express my regret at the absence of certain most familiar friends of old home association. The Rooks are entirely absent. We have no Magpies! no Jackdaws! no Crows! no Choughs! Indeed, during my last winter here, the only members of the Corvine family that I either saw or heard of were one pair of Ravens and one pair of Jays!

Yours, &c.,

J. TRAHERNE MOGGRIDGE.

XV.—*Note on the Harrier of Bourbon* (Circus maillardi, *Verreaux*). By P. L. Sclater.

(Plate IV.)

In the recently-published work of M. Maillard, upon the Island of Bourbon (or Réunion, as it is now more correctly termed), noticed in the last Number of 'The Ibis'*, M. Jules Verreaux, to whom M. Maillard acknowledges his obligations for a series of notes on the ornithology of the island, gives the following description of a Harrier which he believes to be peculiar to Réunion, and for which he proposes the name *Circus maillardi.*

Mâle adulte.

Tête, cou, dos et ailes noir intense; toutes les plumes du cou variées de blanc, c'est-à-dire en partie bordées de cette dernière couleur, coloration qui se retrouve sur le devant du cou, la poitrine et le haut du ventre; mais là le blanc est plus large, et le noir formé de longues larmes terminées en pointe. Tout le reste des parties inférieures, y compris les couvertures sous-alaires, sont d'un blanc pur; grandes tectrices alaires, ainsi que toutes les remiges, les plus grandes exceptées, variées de gris et de noir, les primaires étant d'un noir pareil au corps, la quatrième la plus longue de toutes: queue gris clair argenté en dessus, avec quelques restes de bandes transversales sur la rectrice la plus externe. Longueur totale 47 centimètres; aile fermée 35 centimètres; queue 24 centimètres; tarses emplumés un peu au-dessus de l'articulation, assez longs ainsi que les doigts, de couleur jaune comme la cire du bec: ongles noirs et très-acérés.

Jeune mâle, troisième année.

Plumage brun-noir, lavé de fauve sur une partie de la tête, de la nuque et du cou; mais là le blanc s'y trouve mélangé; le gris des remiges est plus foncé et les bandes plus distinctes que dans le précédent. La queue est d'un gris foncé, traversée par cinq bandes brunes, dont la plus large est vers le bout, qui est bordé de blanc; le gris de la queue est tant soit peu lavé de roussâtre; couvertures sous-caudales rayées de brun vers le bout.

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* *Vide suprà,* p. 104.

Toutes les parties inférieures flammées de brun sur un fond plus clair et roussâtre fortement lavé de blanc, qui devient plus marqué à partir du ventre; les cuisses et les couvertures sous-caudales ne laissant voir que quelques lignes étroites de brun roussâtre çà et là, voire même sur quelques-unes des couvertures sous-alaires: tarses de même que dans le précédent, mais d'une coloration plus pâle ainsi que la cire.

Jeune mâle dans sa première année.

C'est dans cette livrée que cet oiseau est connu, à Bourbon, sous le nom de *Pieds-jaunes*; son plumage est brun-foncé en dessus et roussâtre en dessous, surtout sur les cuisses et les couvertures sous-caudales; le blanc et le fauve sont très-distincts sur la nuque et le cou; les couvertures sur-caudales qui sont d'un blanc pur dans l'adulte, mélangées de brun dans l'âge moyen, sont, dans celui-ci, fauves bordées de blanchâtre: cire et tarses jaune-verdâtre: ongles moins noirs que dans l'adulte.

To this description M. Verreaux adds that the type-specimen of the adult male, now in the Museum of the Jardin des Plantes at Paris, was procured by himself as long ago as when he visited the island in 1826, and that the other younger birds which he describes were sent to the same establishment by M. De Nivoy.

The front figure in the accompanying plate (Plate IV.), for which 'The Ibis' is indebted to the liberality of Mr. J. H. Gurney, represents the adult male of this *Circus* in the Paris Museum, being copied from a drawing procured for Mr. Gurney by M. J. Verreaux.

The hinder figure represents an adult female of the same Harrier in the Norwich Museum, being one of two examples of this species received from the Island of Bourbon, and recently presented to that institution by Mr. and Mrs. Felix Bedingfield. The dimensions (in inches) of these two specimens, the second of which is a young male bird, are as follows, the corresponding measurements of *C. melanoleucus* being added for sake of comparison:—

	Long. tota.	alæ.	caudæ.	tarsi.	dig. med. c. ungue.
Circus maillardi, ♀ ad.	23¼	15	8¾	3	3
Circus maillardi, ♂ juv.......	21¼	14	8½	2⅞	2¾
Circus melanoleucus, ♂ ad. ...	17½	13½	7¾	2¾	2

The plumage of the female *C. maillardi* agrees very well with the description given by M. Jules Verreaux of the male in its first year.

In Dr. Hartlaub's 'Ornithologischer Beitrag zur Fauna Madagascars,' the Asiatic *Circus melanoleucus* is given as an inhabitant of the Island of Bourbon (see p. 21). The description there given is, however, that of the adult male of the present Harrier (*Circus maillardi*), being, indeed, taken from the typical example of this species. Independently of the difference of coloration which distinguishes these two Harriers, and which may be seen at once on comparison of our plate with that given by Levaillant (Ois. d'Afr. pl. 32) of the Asiatic bird, the Bourbon Harrier differs in size and general proportions, as may be noticed by the Table of Admeasurements; and its legs and claws are decidedly stouter.

XVI.—*Notes on Birds observed in Madagascar.* By S. Roch, Assistant-Surgeon, Royal Artillery, C.M.Z.S., and Edward Newton, M.A., C.M.Z.S. Part II.

[Concluded from vol. iv. p. 275.]

36. Coracopsis vaza (Bonaparte), Hartl. p. 58. "Buoaz."

Is very common wherever there is forest. We saw great numbers, in the evening, passing over Ampasimbé in small parties of from a pair to six or seven individuals, whistling as they went. They were a great height up in the air, and evidently had been feeding in the low grounds near the sea, and were then going home to roost in the great forest of Alanamasaotra. The bird is constantly kept tame by the natives.

37. Coracopsis nigra (Linn.), Hartl. p. 58.

We only saw this bird once—a tame one, at Beforona. It was bought by our Indian cook; but it bit his fingers as he was putting it into a basket a few days afterwards, and he killed it in a rage.

38. Poliopsitta cana (Gm.), Hartl. p. 59.

Seen in small flocks on the coast. Many were offered for sale at Tamatave. They appeared to be identical with the "Perruche" of this island.

39. Centropus tolu (Linn.), Hartl. p. 60. "Tooloo."

Very common everywhere up to the end of the forest. It is the tamest and stupidest of birds, in habits putting one in mind of the *Crotophaga ani* of the West Indies. It has one note very peculiar, producing a very hollow indescribable sound, which at first we thought came from some species of Monkey. At Tamatave we observed one building, on the 26th of September.

40. Coua cærulea (Linn.), Hartl. p. 60. "Teesee-teesee."

Seen from the coast up to the forest.

41. Coua cristata (Linn.), Hartl. p. 62. "Teesee-teesee."

One killed at Fantomasin, on the coast.

42. Cuculus rochii, Hartl., P.Z.S., Nov. 11, 1862 *.

One obtained.

"In the Museum of the Royal College, Port Louis, there is a stuffed specimen which appears to be identical with the Madagascar species. It is labelled 'Coucou vulgaire (*Cuculus canorus*), tué au Piton par M. Legentil, le 1^{er} 8^{re}, 1845, offert au Musée Liénard.' This bird, together with the late Mons. Liénard's valuable collection, has been most liberally presented to our local Museum by Mons. E. Liénard, fils. From this example it would appear that the species is an occasional straggler to our rocky island."—E. N.

43. Leptosomus afer (Gmelin), Hartl. p. 63. "Evoondree-oo."

We saw this bird from near Tamatave up to the end of the forest country. It has a peculiar habit of playing in the air above the forest for some time over the same place, ascending

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[* We subjoin Dr. Hartlaub's description of this species, included in his former work as "*Cuculus canorus*:"—

"Cuculus rochii, sp. nov.

"Supra ardesiacus; gutture pallidius cinereo; pectore et abdomine in fundo albo-flavescente fasciis rarioribus angustis nigricantibus; subalaribus flavescenti-albidis, tenuissime ardesiaco fasciolatis; subcaudalibus ochraceis, maculis nonnullis nigris; rectricibus nigris, maculis rarioribus minutis albis prope scapam notatis, omnium apicibus albis; ala extus unicolore, nigricante, remigum pogoniis internis albo fasciatis vel postice transversim maculatis; maxilla nigricante; mandibula flava, apice obscuro; pedibus flavis. Long. 10–11″; rostr. a fr. 8‴; al. 5″ 11‴; caud. 5″ 7–8‴."—Ed.]

almost perpendicularly, as it were by a jump, to a great height, and descending again in a curve nearly to the top of the trees, by almost closing its wings, at the same time uttering a whistle so like an Eagle's that it was for a long time doubted by us whether the bird that performed this wonderful freak was not a Raptorial. However, after having several times watched it with our glasses, we satisfied ourselves that it was this species. Whilst one bird was thus playing, another would frequently answer its cry from a tree hard by.

44. FUNINGUS MADAGASCARIENSIS (Linn.), Hartl. p. 64. "Feningo."

"I shot the first specimen of this species between Ranomafana and Ambatoheranana, on the 8th of October. The outer iris red, middle black, inner yellow; lore red; beak greenish at base, yellowish at tip."—S. R.

We met with them from the above-mentioned place until we reached Ambohitroni, on the opposite side of the plain of Ankay. In the forest they inhabited the tallest trees, sitting on the topmost boughs. Their flesh was inferior in flavour to that of the next species.

45. VINAGO AUSTRALIS (Linn.), Hartl. p. 65.

"I shot one at Mamorack, on the coast, on the 3rd of October: it was exceedingly tame. Others were killed at Ranomafana on our return journey."—E. N.

"I generally found them in thick green trees with large leaves, under which they were wont to hide themselves. They were very common in the belt of forest along the coast, about three miles to the south of Foule Point, increasing in numbers as I proceeded northward. They live almost exclusively on fruit, and are deservedly prized by the French residents as an addition to their *cuisine*."—S. R.

46. TURTUR PICTURATUS (Temm.), Hartl. p. 66.

"I shot a pair on the coast between Mamorack and Vavone on the 5th of October. I have no hesitation in saying that it is specifically identical with the Turtle Dove found in Mauritius." —S. R.

47. Œna capensis (Linn.), Hartl. p. 67.

The only specimen obtained was killed at Tranomaro, on the coast, on the 2nd of November; another one was with it at the time. The species was not observed elsewhere.

48. Numida tiarata, Bonaparte; Hartl. p. 68. "Akonga."

Pretty generally distributed over the country up to Beforona, but commoner along the coast-line, where they are found in the early morning feeding amongst the ferns and brushwood on the outskirts of the forests.

"At Foule Point, in November, four eggs of this species were brought to me. They resemble highly-coloured examples of those of the domestic Guinea Fowl; long diameter 2·1 inch, transverse diameter 1·52 inch. In that neighbourhood the species is very common, and I saw several coveys between there and Nossi-bé. The natives often hunt them with dogs; and I was told that the birds, endeavouring to conceal themselves from the latter, will allow themselves to be taken in the hand, rather than fly or run into the open. When "treed," they will remain with their long necks stretched out in stupid astonishment as long as the dogs continue yelping underneath, paying no regard to their dangerous pursuers, and thus affording an easy shot to the native sportsman. The flavour of their flesh alters considerably with the food they have been eating."—S. R.

49. Margaroperdix striata (Gmelin), Hartl. p. 69. "Trou-trou."

Seen from the coast up to Ambodinagavo.

"I found them, in November, common within a short distance of the sea, from Tamatave to Foule Point. At that time they were in pairs, and exceedingly tame. One pair, that a native fired at with my gun, flew but a short distance, and ran across an open space in full sight. The man had to take me over a river on his back to shoot them, when I found a broken egg in the hen bird. Iris black; bill bluish at base, with black tip; legs speckled, bluish olive."—S. R.

50. Turnix nigricollis (Gmelin), Hartl. p. 70. "Kiboo."

Seen from Boiboahazo up to Ankera-Madinika, the first village of the Hovah country that we passed. They were not common on the coast; but a good many were found on the grassy knolls about Ranomafana and Ampasimbé, where four and a half brace were obtained.

"I met with them in small numbers about Foule Point. Iris black; legs flesh-colour; bill bluish."—S. R.

51. GLAREOLA GEOFFROYI, Pucheran; Hartl. p. 71.

At our first halting-place on the road from Tamatave to the capital, on the 1st of October, we saw and shot several Pratincoles. The river Hivoondroo runs out into the sea about a mile and a half below a village bearing the same name, and has on its left bank a treeless sandy plain. Here we found these birds, together with Sanderlings and two species of Plover. Unfortunately, those which we skinned were destroyed, and we have no specimens by which to identify them; but we have little doubt that the Pratincoles were of the same species as an example afterwards obtained by Dr. Roch.

"At Nossi-bé, a small village to the north of Tamatave, I found many Pratincoles in the native burial-ground, which appeared to be their breeding-place, though I was unable to discover either eggs or young. Their manners strongly reminded me of those of the Lapwing—screaming high in the air, and then darting along the ground, as if to draw my attention away from their broods. I thus easily obtained several specimens. Their flesh at this time (so near the breeding-season) was, of course, dry."—S. R.

52. ? CHARADRIUS TENELLUS, Hartl. p. 72*.

A small species of Plover was several times seen by us along the coast, and one even on the plain of Ankay, between Mooramanga and Ambohitroni.

"I shot several of these birds at Nossi-bé."—S. R.

53. ? CALIDRIS ARENARIA (Linn.).

On a sand-spit at Hivoondroo we killed two or three birds, which we feel sure were Sanderlings. Unfortunately, their skins were destroyed. They were in winter plumage.

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* [The specimens sent by Dr. Roch are not in good condition, and, being also apparently immature, some doubts may be entertained as to the species.—ED.]

54. ? Ardea purpurea, Linn.; Hartl. p. 73.

We several times saw, and occasionally killed, a species much resembling the European Purple Heron. Unfortunately, as in the case of the preceding, all the skins were destroyed.

55. Ardea elegans, J. Verreaux; Hartl. p. 73.

"I shot one at Farafata, about five miles to the north-west of Tamatave. Unlike other birds of its genus, it flies with its neck stretched out. I saw a pair, but only obtained one of them."—S. R.

56. Ardea bubulcus, Savigny; Hartl. p. 74.

"At Antananarivo, on the 20th of October, a man brought me a female of this species alive. Iris yellow; lore greenish yellow; lower mandible reddish; legs brown."—E. N.

"At Farafata I saw several of a small Egret, apparently the last named, taking short flights from bush to bush by the side of the lake."—S. R.

57. Ardea ruficrista, Verreaux; Hartl. p. 74. "Voron-coonche."

Very common in the neighbourhood of Tamatave. We almost daily observed flocks of white Egrets on our journey up the country, even as far as the Mangourou, more than one hundred miles from the coast: they were in constant attendance on herds of cattle, from whose skins they would dexterously pick off the ticks and *carapats.*

"I also observed that, whenever the natives burnt brushwood or grass-land, these birds collected in numbers in the very smoke, to catch any insects that were thus driven from their resting-places. This species has the iris yellow."—S. R.

58. Scopus umbretta, Gmelin; Hartl. p. 76. "Thakat."

We first saw this species on the 15th of October, when about fifteen miles from the capital. Its flight is not Heron-like; the head only is somewhat drawn in, and the legs are drawn up. At first sight, one is apt to take them for very short-tailed Eagles or Hawks; and hopes of *Helotarsus ecaudatus* came across us as we saw them. Colonel Middleton, our chief, saw one of them carrying a stick to its nest, and he afterwards shot the bird.

The nest was an enormous mass of sticks, grass, roots, and rushes, at least four feet high by three feet wide, and even then was unfinished. It was situated in the fork of a tree, ten or twelve feet from the ground. In this almost treeless part of the country there are generally small scrubby clumps of low trees near each village, and it was in one of these that this nest was placed.

"On my return from the capital I found four nests of this bird close together in one clump of trees. Three of them were in the same tree; the fourth on another, which had been partially blown down, and not more than six feet from the ground. It was with some difficulty that I climbed over the nest; and so solidly was it built, that it bore my weight. There were two entrances to this nest (the others had only one each) ; and notwithstanding the great size of the edifice, the chamber within hardly appeared large enough to contain its future tenants."—S. R.

59. LOPHOTIBIS CRISTATA (Gmelin), Hartl. p. 76. "Tche-coo-coohoo."

"These birds were occasionally met with in the jungle and belt of forest along the sea-coast in the neighbourhood of Foule Point. I obtained a fine male specimen in the Mango-tope which surrounds the king's house at the above-mentioned place. It had evidently come to visit a female kept in captivity there. I had an opportunity of seeing this latter feed, which it did by boring its bill into the soft earth, and thence extracting, with great dexterity, the worms, its principal food. There did not appear to be much difference between the sexes. The flesh of these birds is exceedingly good. Iris golden brown; naked skin round the eye reddish flesh-colour; bill pale pea-green."—E. N.

60. NUMENIUS PHÆOPUS (Linn.), Hartl. p. 77. "Masha-vazan."

Common along the coast, but not very numerous.

61. ? TRINGOIDES HYPOLEUCUS (Linn.), Hartl. p. 77.

We several times saw what we believed to be the Common Sandpiper of Europe, and some specimens were shot, but, unfortunately, not preserved. They did not appear further up the country than Ranomafana, about twenty-three miles from the coast.

62. Gallinago bernieri, Pucheran; Hartl. p. 78. "Rav-rav."

This species was tolerably common along the coast, where it had evidently just been breeding, as Dr. Roch found a young one, about four days old, on the 3rd of October, between Tranomaro and Mamorack. Unfortunately it was not preserved. In colouring it approached the young *Gallinago scolopacinus* more than either *G. major* or *G. gallinula*. In the valleys near Ambohitroni, about ninety-four miles from the coast, we found this species more numerous, and in about half an hour killed nine couple. Their flight was slow and steady, and they did not twist in the least. These were evidently *not* breeding. The largest we measured was 19·25 inches in extent of wing, and 17·5 inches from the tip of the bill to the end of the tail. Sixteen appeared to be the normal number of tail-feathers. We have been told that they were shot in great numbers near the capital, about a month or so after we were there—one Frenchman killing a hundred and thirty in a week. We did not observe the species beyond Ambohitroni.

"One that I shot at Foule Point, on the 13th of November, weighed 7½ silver five-franc pieces. This bird did not measure quite as much as the one mentioned above. Iris and bill black; legs slate-colour."—S. R.

63. Rhynchæa capensis (Linn.), Hartl. p. 78. "Rav-rav."

We met with these birds from Andovirauto on the coast, to Ambohitroni. They were nowhere very common, and generally not more than a solitary bird or a pair was to be be found in the same place, though on one occasion three or four were seen together. They lie very close in rice-fields or marshes, and their flight is slow and straight. They seldom fly far. The natives do not distinguish between them and Snipes.

"I shot a pair of these birds at Farafata."—S. R.

64. Parra albinucha, Is. Geoffroy; Hartl. p. 78.

Tolerably common on the lakes near the coast, where water-lilies grow; the majority of these lakes, however, being slightly brackish, are not suited to such plants. These birds are exceedingly tame, and allow you to approach in a canoe within easy gun-range as they walk on the water-lily leaves. If missed, they scuttle along the surface of the water with their long toes trailing in it, and alight on another patch of lilies, perhaps not fifty yards from their former position.

"In some places the natives regard them with superstitious feelings, and do not like them to be killed."—S. R.

65. BIENSIS MADAGASCARIENSIS, J. Verreaux; Hartl. p. 79. "Kuru-kuru."

"At Boiboahazo I saw a boy with a small Water-Rail alive, but I had not time to skin it. It appeared to be the same as those afterwards obtained by Dr. Roch."—E. N.

"I did not meet with this bird so frequently as with the next species. Their flight is excessively short, and they trust to their feet rather than to their wings for safety. It was consequently difficult to find them without a dog. I shot a male and female in a marsh near Foule Point, on the 14th of November."—S. R.

66. CANIRALLUS KIOLOIDES (Pucheran), Hartl. p. 80. "Chicosa."

We found this bird occasionally in the rank vegetation of the lakes on the coast.

"I shot a male and female, which appeared to me to have paired, at Farafata, on the 8th of November. Iris reddish brown; bill dark pinkish olive, with black tip; legs dark olive. Length from the tip of the bill to the end of the tail 13 inches; extent of wing 16 inches."—S. R.

67. PORPHYRIO MADAGASCARIENSIS (Gmel.), Hartl. p. 81. "Thalaveen."

Observed near Tamatave.

"These birds were very common at Farafata and Foule Point. I obtained several specimens at both places, and a nest with eggs at the former in November. On the 13th of that month I shot two well-grown young ones. The flesh of these birds is deservedly prized for the table. Iris brown; bill and bald patch on forehead red; a dark patch on the side of the former; legs reddish flesh-colour."—S. R.

68. GALLINULA PYRRHORRHOA, A. Newton, P.Z.S., 1861, pp. 18, 19. *G. chloropus*, Hartl. (non Linn.), p. 81.

Not uncommon in the neighbourhood of Tamatave. It is possible that this species may have been introduced into Mauritius from Madagascar.

69. NETTAPUS AURITUS (Boddaert), Hartl. p. 82.

This pretty little Duck is very numerous on the lakes near the coast, and affords both excellent sport and an excellent second course. They are generally wild, but sometimes allow a canoe to approach within gun-shot. They sit low in the water, like the true Diving Ducks. Upon being disturbed, they fly with great rapidity. On one occasion a pair were observed sitting on a low tree overhanging the water. If wounded, they are difficult to pick up, from their expertness in diving.

70. ANAS XANTHORHYNCHA, Forster. *A. flavirostris*, A. Smith, Ill. S. Afr. Zool. pl. 96. "Rahak."

The only specimen preserved was brought to Dr. Roch at Tamatave. We afterwards saw the species up the country, at Ampasimpotsi, about seventy-four miles from the coast.

71. DAFILA ERYTHRORHYNCHA (Gmelin), Hartl. p. 82.

"I shot three specimens of this species at Nossi-bé, where they were seen hovering over the rice-fields in tolerable numbers. Their flight was much more rapid than that even of *Nettapus auritus*. I think I also saw them on the great plain near Mooramanga."—S. R.

72. DENDROCYGNA VIDUATA (Linn.), Hartl. p. 83. "Tharkika," "Churu-ru."

Found from the coast to the great plain near Ambohitroni, sometimes in large flocks of from twenty to sixty. They were very tame, and easily shot.

"The latter of the above two native names, by which this bird is more generally known, is probably taken from its note. On shooting one of a pair, the survivor would commonly return for its mate, and hover round until it, in its turn, fell a victim to its constancy."—S. R.

73. Dendrocygna arcuata (Cuvier), Horsfield, Zool. Res. pl.

"I saw this species, which in habits much resembles the last-named, at Ambohitroni, and also at Nossi-bé, where I obtained a specimen."—S. R.

74. Podiceps pelzelni, Hartl. p. 83.

"When crossing the Mangourou, near Ambohitroni, on the 24th of October, a small Grebe was seen. The next day, on a little swamp in the great plain, I shot a male. This plain, I may mention, is a delightful spot for an ornithologist; and I am sure we should have been well repaid, had we been able to stay there a week. The iris of this bird is red."—E. N.

"I saw what I believe to have been a specimen of this species at Nossi-bé."—S. R.

75. Thalassidroma melanogastra, Gould, Ann. & Mag. N. H. 1844, vol. xiii. p. 367; B. Austral. vol. vii. pl. 62.

Several of these small Petrels followed us on our voyage from Mauritius to Tamatave; and the day before we made the land of Madagascar, one was caught by a piece of thread, which had been thrown over the taffrail to trail in the sea. It was a male.

76. ? Larus —— (sp. indet.).

A Gull was observed by us in the roadstead of Tamatave on our arrival there in September.

77. Phaëton phœnicurus, Linn.; Hartl. p. 86.

The day we made the land, a Red-tailed Tropic-bird kept near the ship for some short time.

78. Phaëton flavirostris, Brandt; Hartl. p. 86.

Several were seen near the coast.

79. ? Halieus africanus (Gmelin), Hartl. p. 86.

"On our return journey, on the 24th of October, I saw two Cormorants, probably of this species—one on the Antataby and one on the Mangourou."—E. N.

"I saw a Cormorant, at Nossi-bé, which appeared to me very similar to the bird found on the marshes near Calcutta."—S. R.

Note.—"An example of *Eurystomus madagascariensis* (No. 13 of this paper), obtained in Mauritius, is preserved in our Museum. As, for some months preceding the time of year when it was taken, a strong trade-wind constantly blows from the eastward, I am inclined to think it is more likely to have been a bird escaped from confinement, than to have strayed here from Madagascar of itself. I am indebted to Mons. Bouton, the Secretary to the Royal Society of Arts and Sciences, for the following extract from the manuscript Proceedings of the old 'Société d'Histoire Naturelle de Maurice,' respecting its capture:—

" 'Note sur un Rollier de Madagascar pris dans les forêts de l'isle Maurice, lue à une séance de la société d'histoire naturelle, le 15 janvier, 1834, par M. Julien Desjardins.

" 'En 1826, à la fin du mois de novembre, j'aperçus dans les bois qui avoisinent la Rivière Françoise au quartier de Flacq, un gros oiseau qui m'était tout-à-fait inconnu. Mon domestique étant parvenu, après l'avoir poursuivi assez loin à l'étourdir d'un coup de pierre, je l'emportai aussitôt. Je fus assez heureux pour le faire revenir à la ville, et même je pus le conserver en cage pendant une dizaine de jours. Pendant cette courte captivité, je le nourrissais de pain et de riz, cuit à l'eau, et j'ajoutais quelquefois un fruit qu'il mangeait avec le même plaisir que les aliments cuits. Son cri, qu'il faisait entendre plusieurs fois dans la journée, rassemblait à un coassement assez fort et désagréable. Il mourut après avoir langui quelques jours; et comme il avait été mis dans une cage trop petite, et où ses mouvements étaient très gênés, son beau plumage en souffrit.' "—E. N.

ERRATA IN PART I. OF THIS PAPER*.

Page 267, line 3, for "*Margaroperdix striata*" read "*Turnix nigricollis*".

Ibidem, line 6 from bottom, for "Imesina" read "Imerina".

Page 275, line 16, for "Ankaranickra" read "Ankera Madinika".

Ibidem, line 23 *et seqq.*, for "at Ampasimbé, on the great plain near the Mangourou. It was", &c., read, "at Ampasimbé. On the great plain near the Mangourou, it was", &c.

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[*] Ibis, vol. iv. p. 265.

[In the collection of skins sent home by Dr. Roch is one of an *Avicida* in immature plumage, which is considered by Mr. Gurney to be the bird described by Sir A. Smith (S. Afr. Journ. ii. p. 285) as *Pernis madagascariensis.* This species is united by Hartlaub (p. 19) to *Avicida verreauxii* of South Africa, but it seems to be distinct from that species, and should stand as *Avicida madagascariensis.* There is no note by Dr. Roch respecting this specimen.—Ed.]

XVII.—*Notes on the Birds breeding in the Neighbourhood of Sydney, New South Wales.* By E. P. Ramsay, Esq., of Dobroyde.

1. The Emeu Wren (*Stipiturus malachurus,* Gould, B. Austr. iii. pl. 31).

I had for many days visited the swamps upon Long Island, where these birds were very plentiful, in hopes of finding them breeding; but it was not until the 25th of September 1861, that I succeeded in discovering a nest, although I had watched them for hours together for several days.

While walking along the edge of the swamp, however, on this day, I was agreeably surprised by disturbing a female, which flew from my feet out of an overhanging tuft of grass growing only a few yards from the water's edge. Upon lifting up the leaves of the grass, which had been bent down by the wind, I found its nest carefully concealed near the roots, and containing three eggs. As the bird did not fly far, but remained close by, in a small Swamp-oak (*Casuarina,* sp.), I had a good opportunity of satisfying myself that it was a veritable "Emeu Wren." The eggs were, of course, quite warm, and within a few days of being hatched: this may account for the bird being so unwilling to leave the spot; for when I returned about five minutes afterwards, the female was perched upon the same tuft of grass, and within a few inches from where I had taken the nest. The whole nest is of an oval form (but that part which one might term the true nest is perfectly round), placed upon its side; the mouth very large, taking up the whole of the upper part of the front. It is very shallow—so much so that, if tilted slightly, the eggs would roll out, they being almost upon a level with its edge. It is outwardly composed of grass and the young dry shoots of the reeds which are so common in all the swamps near the Hunter River, lined with fine grass, roots, and finally a very fine green moss. It is very loosely put together, and requires to be moved very gently to prevent it falling to pieces.

The eggs were three in number, 6½ lines long by 4½ broad, sprinkled all over with minute dots, of a light reddish brown (brighter in tint than those of the *Malurus cyaneus*), but more numerously at the larger end, where they are blotched with the same colour. One of the three had no blotches, but was only minutely freckled all over. The ground-colour is a delicate white, with a blush of pink before the egg is blown.

The only note of the birds, besides a slight chirp when flushed and separated, is a slight twitter, not unlike a faint attempt to imitate the *Malurus cyaneus*; this I remarked several times while watching them. I noticed several separate flocks while in the swamp, which was at that time nearly dry. Some were hopping along the ground, stopping to pick up something here and there; others, whose appetites seemed appeased, were creeping along through the reeds about a foot from the ground, but, as the reeds thickened, I soon lost sight of them. They seldom take wing, except when disturbed, and not always then, seeming very averse to show themselves. Once or twice, while watching them, I observed one of them hop to the top of a tall reed, as though to get a glimpse of the world above. When coming suddenly upon a flock of Emeu Wrens, on following them up, you find them keep to the reeds just in front of you. They never take wing unless compelled to do so by being hard driven, when they separate and do not get together again for some time.

2. The WHITE-FRONTED EPHTHIANURE (*Ephthianura albifrons*, Gould, B. Austr. iii. pl. 64).

These birds arrive here about the beginning of September and October. In the latter month they commence to build; for this purpose they choose some open land, studded with low bushes. The stunted *Bassariæ*, the prickly twigs of which are often used to form the framework of their nests, seem their favourite building-places. The nests are usually situated a few inches from the ground, and are cup-shaped, and placed upon a strong framework of twigs, and neatly lined with grass, hair, &c. I have frequently found them among the dead leafy tops of a fallen *Eucalyptus* which has been left by the wood-cutters when clearing a piece of new ground.

The eggs of this bird are usually three, but sometimes four, in number, from 6½ to 7 lines long by 5 broad, beautifully white, some spotted, and others irregularly marked, with bright deep-reddish brown at the larger end, where, in some, the spots form an indistinct zone. In other specimens the spots are crowded at the top, and very sparingly sprinkled on the other parts of the egg.

These birds easily betray the position of the nest or young, by their anxiety and attempts to draw one from the spot by feigning broken wings, and by lying struggling upon the ground as if in a fit. They have two broods (and perhaps more) in the year, after which the young accompany the parent birds to feed, generally on the salt marshy grounds near the water's edge. About Botany and the Parramatta River, upon the borders of the Hexham swamps, &c. &c., they are plentiful.

These birds give most decided preference to the open, half-cleared patches of land. I never found more than four or six together, doubtless the offspring of one pair; still it is not unusual to find them in pairs only. As far as I am aware, they have but one (very plaintive) note, emitted chiefly when flying or when the nest is approached.

3. The Green-backed Oriole (*Oriolus viridis*, Gould, B. Austr. iv. pl. 13).

During the winter months these birds may be found in flocks, from five to twenty in number, feeding upon various cultivated and wild fruits, and often in company with the Fruit-eating Magpies, the note of which they often imitate. They frequent nearly all the orchards and gardens about Sydney, and especially if they contain any of the Native Olive or Moreton Bay fig-trees in fruit, to which they seem very partial. I have known them, though seemingly with great reluctance, eat the berries of the White Cedar. Towards the beginning of September (about Sydney) they pair off and seek for breeding-places, each pair taking a locality to themselves, which they keep during the whole of that season; and, like the *Grallina australis,* if the nests are taken, they will continue building, and near the same place, until the season has expired.

In all respects the nest is like that of the Friar-bird (*Tropidorhynchus corniculatus*), differing only in the size, which is a little smaller, being from 4 to 5 inches in diameter, 3 to 4 inches wide inside, and about 3¾ inches deep. It is cup-shaped, composed of shreds of the bark of the Stringy-bark tree (*Eucalyptus,* sp.), strongly interwoven; the inside is made thick and more compact by addition of the white paper-like bark of the Tea-tree, or, in its absence, any other material adapted for the purpose; lastly, it is lined with the narrow leaves of the native oaks, or with grass and hair.

The nest is usually suspended between a fork at the very end of a horizontal bough of *Eucalyptus,* Tea-tree, Turpentine-tree, &c. &c., and often in very exposed situations.

The eggs are from two to three in number, usually three. In two instances only did we find four—the first of these being in 1860, and the second in 1861. In length the eggs are from 1 inch 2 lines to 1 inch 4 lines; in breadth, from 9 lines to 1 inch. The ground-colour varies from a rich cream to a dull white or very light brown, minutely dotted and blotched with umber and blackish brown, with faint lilac spots which appear beneath the surface, all over in some; but generally the spots are more numerous at the larger end, where they form an indistinct band.

The note of this Oriole is very melodious and varied. It may often be seen perched in some shady tree, with its head thrown back, showing to perfection its mottled breast, singing in its low tone, and imitating the notes of many other birds, including the *Zosterops australis,* and particularly the Black or Fruit-eating Magpie. It also indulges in a harsh guttural sort of squeak, which it frequently emits while feeding. During the breeding-season (which commences at the end of September, and ends with January), it confines itself to a very monotonous although melodious cry, the first part of which is quickly repeated and which ends in a lower note.

XVIII.—*Descriptions of eight New Species of Birds from the Isthmus of Panama.* By GEO. N. LAWRENCE, Corr. Mem. Zool. Soc., &c.

Fam. HIRUNDINIDÆ.

1. COTYLE UROPYGIALIS, sp. nov.

Cotyle flavigastra, Lawr. (nec Vieill.) Ann. Lyc. N. Y. vol. vii. p. 317.

In the 'Annals of the Lyceum of Nat. Hist. of N. York,' as above cited, I pointed out some differences between the birds received from Panama and *C. flavigastra* from Cayenne. Others, since received, showing these differences to be constant, I am induced to consider them to be distinct species.

The specimens from Panama are smaller, the upper plumage is of a rather deeper brown, except the rump, which is greyish white, the yellow of the abdomen is rather paler, and the under tail-coverts whiter.

Male. Length about 5 inches; wing $4\frac{1}{8}$; tail $2\frac{1}{8}$.

Female. Wing $3\frac{3}{4}$ inches; tail 2.

The wings of two specimens of *Cotyle ruficollis* sive *flavigastra**, from Cayenne, measured $4\frac{5}{8}$ inches; the sexes of these are not known.

Fam. DENDROCOLAPTIDÆ.

2. DENDRORNIS NANA, sp. nov.

Head above and hind part of neck dark brown, each feather marked in the centre with a small oval tawny spot, these spots becoming elongated in shape behind the neck; upper part of back and wing-coverts brownish olive; lower part of back and rump bright rufous; tail deep cinnamon-brown; quills dark cinnamon-red, dusky at their ends; under wing-coverts pale cinnamon; throat and sides of the neck pale fulvous; breast and abdomen brownish olive, darker on the sides; marked with elongated fulvous spots on the breast and abdomen, these becoming nearly obsolete on the lower part of the latter; under tail-coverts dull rufous; bill brownish horn-colour, the under mandible a little paler than the upper; legs and feet dark brown.

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* [This bird agrees with the specimens from Ecuador which I have noticed, in my list of Fraser's collection, P. Z. S. 1860, p. 292, as showing differences from *C. ruficollis.*—P.L.S.]

Length 7 inches; wing $3\frac{3}{4}$; tail $1\frac{7}{8}$; bill $1\frac{3}{8}$; tarsi $\frac{13}{16}$.

Fam. FORMICARIIDÆ.

3. Formicivora virgata, sp. nov.

Male. Intense black, a large concealed patch of pure white on the back; tail black, each feather with a white spot at the end, largest on the outer feathers; wings black, the bend of the wing white, the lesser coverts marked with small white spots, as in *F. boucardi,* and the larger coverts ending in pure white and forming a conspicuous mark on the wing; under wing-coverts and inner edges of quills white; the feathers on the sides of the breast marked along their shafts with a narrow stripe of white, which reaches nearly to their ends—these marks being only apparent on raising the feathers; bill and legs black.

Length 4 inches; wing $1\frac{7}{8}$; tail $1\frac{3}{4}$; tarsi $\frac{11}{16}$.

Female. Resembles the male in the upper plumage, but below is entirely of a very deep chestnut-red.

This species belongs to the group embracing *F. quixensis, F. boucardi,* and *F. consobrina,* and most resembles the latter, but differs in having longer wings and tail, in the greater extent of white on the bases of the feathers of the back, and in having the pectoral feathers marked with white stripes down their centres, in this last character apparently differing from all its allies.

4. Myrmelastes corvinus, sp. nov.

Male. The general colour is crow-black, with a large concealed spot of pure white between the shoulders; tail black; quills blackish brown, with their inner edges greyish white; smaller wing-coverts black, narrowly edged with white, some of the white tinged with rufous; larger coverts dark chocolate-brown, ending with dull rufous; bill black; legs dark brown.

Length of skin 6 inches; wing $2\frac{7}{8}$; tail $2\frac{1}{2}$; tarsi $1\frac{1}{8}$; bill $\frac{3}{4}$.

Fam. TYRANNIDÆ.

5. Myiozetetes marginatus, sp. nov.

Second, third, and fourth quills equal and longest, first shorter than sixth.

Upper plumage rather dull olive-green; crown and sides of the head, including the eyes, dusky olive-brown; front greyish, connected with a conspicuous superciliary stripe of white, which terminates on a line with the occiput; the crest is very narrow, consisting of a few pointed feathers of bright vermilion; wings and tail of a liver-brown, the wing-coverts, primaries, and most of the secondaries edged with pale rufous, a few of the inner secondaries edged with pale yellow; all the tail-feathers broadly margined on both webs with pale rufous; throat greyish white; lower part of neck, breast, and abdomen deep yellow; the lower part of the abdomen and the under tail-coverts paler yellow; under wing-coverts deep yellow; inner edges of quills of a pale salmon-colour; bill and legs black.

Length $6\frac{1}{4}$ inches; wing $\frac{3}{16}$; tail 3; bill $\frac{1}{2}$; tarsi $\frac{11}{16}$.

This species somewhat resembles *M. similis*, Spix, but is smaller, the tail-feathers narrower, with their rufous edgings paler and much broader.

The very narrow crest is a striking character; and as the specimen described seems to be in adult plumage, I judge it to be fully developed.

6. MYIOBIUS ATRICAUDUS, sp. nov.

Myiobius barbatus, Lawr. (nec Gm.), Ann. Lyc. N. Y. vol. vii. p. 328.

Upper plumage greenish olive; crest bright yellow; rump sulphur-yellow; quills blackish brown, narrowly edged with olive-green; tail black; under plumage pale yellow, tinged with pale fulvous on the throat; upper mandible dark brown, under mandible white, just tipped with brown; legs brown.

Length $4\frac{1}{2}$ inches; wing $2\frac{1}{4}$; tail $2\frac{3}{8}$; tarsi $\frac{5}{8}$.

Male and female alike in plumage.

Smaller than any of its allies, also paler below, and with less tawny on the neck and breast even than in *M. xanthopygius*; the colour of the rump is about the same as that of *M. sulphureipygius*, but more in extent, and the bill is rather smaller than in that species; the tail is black; in all other species examined, it is blackish brown.

7. Platyrhynchus superciliaris, sp. nov.

Platyrhynchus cancroma, Lawr. (nec Licht.), Ann. Lyc. N. Y. vol. vii. p. 330.

Upper plumage greenish olive; crown chestnut-red, orange-yellow in the centre, and bordered with black; adjoining this black border is a superciliary stripe of pale yellow, which runs from the upper mandible to the occiput; the ear-coverts are yellowish olive, bordered above and below with black; quills and tail umber brown, the former edged with olive-green inclining to rufous, the latter with light rufous; under plumage yellow, brightest on the throat and abdomen, with the breast and sides olivaceous; under wing-coverts yellow; upper mandible black, the under dusky, pale at the tip; legs and feet brown.

Length $3\frac{1}{4}$ inches; wing $2\frac{1}{4}$; tail $1\frac{1}{8}$; tarsi $\frac{5}{8}$.

Resembles *P. coronatus*, Scl., in the colouring of the crest, but appears to differ from that and all others in having a pale yellow superciliary stripe.

Fam. PICIDÆ.

8. Celeus squamatus, sp. nov.

Female. Entire head, neck, and upper plumage bright reddish cinnamon, darkest on the upper part of the back and on the wing-coverts, and paler on the lower part of the back; there are a few black spots on the front, and the feathers of the back, rump, and wing-coverts are marked with narrow black bars; the tail is rather light cinnamon, crossed with black bands, and black at the end; quills bright cinnamon, sparingly marked on both webs with small black spots and brownish black at their ends; inside of wings cinnamon; breast, sides, abdomen, and under tail-coverts of a much paler cinnamon, each feather bordered with a conspicuous submarginal black band, giving a scaly appearance to the entire under plumage; legs and bill plumbeous.

Length 8 inches; wing $4\frac{7}{8}$; tail $3\frac{1}{8}$; bill $\frac{7}{8}$; tarsi $\frac{3}{4}$.

This species resembles *C. fraseri*, but apparently differs from it, especially in having the tail banded with black. In the figure of *C. fraseri* given by Malherbe the tail is brown, with fulvous spots only on the outer edges of the webs*.

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* [Not the same as *C. fraseri*, of which the unique specimen is in my collection, but nearly allied to that species.—P. L. S.]

XIX.—*Two Days at Madeira.*

By Alfred Newton, M.A., F.L.S., F.Z.S.

To a naturalist, beyond any other traveller, I think, the aspect of a country he is visiting for the first time, in whatsoever part of the world it may lie, is a matter of great and never-ending interest. This interest is, of course, greatest in the case of a country whose natural productions are entirely unknown; but it would not be inconsiderable even in one, if such there be, whose fauna and flora have been already thoroughly worked out. It accordingly follows that localities of the intermediate and most numerous class, where the animals and plants are already more or less catalogued, must possess an interest inversely proportionate to the amount of facts which are on record concerning them. Such an instance of the middle class is offered by the cluster of islands known as the Madeiras, the field wherein one of the most reflective and diligent zoologists of our time has so long laboured. Even of those among us who take no special heed of entomology, there can scarcely be one who has not been charmed with the writings of Mr. Wollaston, whether from the ardent love of nature and the keen powers of observation they betray, or the masterly handling of results and the sound inductive philosophy they evince. Ornithologists may well wish that a naturalist so gifted had paid as much attention to the birds of the Madeiras as to its beetles, and this without in any way depreciating the useful information respecting the former, furnished at various times by Mr. Edward Vernon Harcourt*. It is rather in the hope of encouraging some one who may have the opportunity of further studying Madeiran ornithology that I venture to offer the following remarks; for I myself, during my late short visit, collected no specimens, and made no personal observations, possessing any novelty.

The European character of the Madeiran fauna is well known.

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* "Notice of the Birds of Madeira," P.Z.S., 1851, pp. 141–146, reprinted in Ann. and Mag. Nat. Hist. 2nd ser. vol. xii. pp. 58–63; 'A Sketch of Madeira,' London, 1851, pp. 115–123; "Description of a New Species of *Regulus* from Madeira," P. Z. S., 1854, p. 153; and "Notes on the Ornithology of Madeira," Ann. and Mag. Nat. Hist., 2nd ser. vol. xv. pp. 430–438.

Of the ninety-nine birds included in Mr. Vernon Harcourt's latest and most complete list ('Ann. & Mag. Nat. Hist.' June 1855, 2nd ser. vol. xv. pp. 430-438), only *one*, *Procellaria pacifica*, Aud. (if that be a good species, and rightly identified, which I think open to doubt), appears to be a straggler from the New World; but *three* are to be considered African—*Musophaga africana*, *Porphyrio alleni*, and *Procellaria mollis**; while *four* are given which are common and peculiar to the neighbouring Atlantic islands—*Fringilla butyracea*, *F. tintillon*, *Cypselus unicolor*, and *Columba trocaz*. To these latter may probably be added *Anthus berthelotii*, first distinguished by Dr. Bolle ('Ibis,' 1862, pp. 343-348, and 'Journ. f. Orn.' 1862, pp. 357-360) as distinct from *A. pratensis*, under which name he supposes that it figures in Mr. Vernon Harcourt's list, and making therefore *five* species which are not inhabitants of other parts of the world. There is besides *one* species which, as far as is known, is confined to Madeira only—*Regulus maderensis*†. The remaining *eighty-nine* have never been accounted otherwise than identical with European species.

It is a very true remark of that prince of observers in natural history, Gilbert White, that "that district produces the greatest variety which is the most examined." Hence I cannot but infer that the species of birds to be found in the Madeiras are much more numerous than even Mr. Vernon Harcourt's catalogue shows. I have the greater confidence in this belief from information given me by a gentleman resident in those islands. He told me he had himself, though paying no particular attention to the subject, met with several species, of which he did not know the names, not included in that list. Islands situated at a distance from other lands seem to be much resorted to by birds that, in the course of their periodical migrations, have gone astray; and it only requires the constant presence of a good watchman to secure these stragglers and record their occurrence. This I believe to be the chief reason for the otherwise unaccountable richness of the ornithology of an isolated rock, like Heligoland. Now, unfortunately, the Madeiras do not possess a Herr Gätke: as far as I am able to learn, they have not a single ornithologist permanently resident and always on the look-out for a novelty. Ornithologists, and some of them good ones, have visited the island, nay, have passed perhaps many seasons there; but their powers of observation have often been limited by other causes. They have either been invalids themselves, like Dr. Heineken*, or have been the companions of invalids. Consequently, of the character of the casual additions to the Madeiran avifauna we are quite ignorant. On the other hand, I do not suppose that the number of species really inhabiting the islands is likely to be materially increased by any future observations.

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* This species, although figured by Mr. Gould in his 'Birds of Australia' (vol. vii. pl. 50), probably only occurs in Australian waters as a straggler. It is stated by him to be "very abundant from the 20th to the 40th degrees of S. lat." ('Ann. & Mag. Nat. Hist.' vol. xiii. p. 364). Its only known breeding-place, as far as I am aware, is on the Dezertas, whence my friend Dr. R. T. Frere has had many specimens.

† Mr. Darwin appears to have overlooked this decidedly distinct species, when he states ('Origin of Species,' p. 391) that "Madeira does not possess one peculiar bird."

Still there is much in the Ornis of the Madeiras that merits or requires further elucidation. The facts that *Scolopax rusticula* is stationary all the year, and constantly, though in small numbers, breeds in latitude 33° S., and that *Petronia stulta,* departing from its customary habits of seclusion on the continent of Europe, is met with on trees in the centre of the town of Funchal, are such as, if they did not come to us on undoubted authority, would scarcely be credited. It is almost impossible that these should be the sole exceptional peculiarities of their kind in Madeiran ornithology.

To British oologists the Madeiras have for some years been known as the locality whence they have obtained a plentiful supply of the eggs of various Procellariidæ. These were, I believe, first imported into this country by my friend Dr. R. T. Frere; and it is very much to be regretted that we have so little information respecting the breeding-habits of the birds which produce them. Some of us who are afflicted with the mania for egg-collecting, and who are sceptical on every point pertaining to our favourite study, have expressed doubts as to the genuineness of the specimens called by the name of *Puffinus obscurus.* These entirely want the strong musky smell which is so characteristic, as far as we know, of eggs of the whole family; and, I believe, insinuations have been occasionally uttered respecting the Bantam-hens which might be kept to lay these valuable objects. I confess to having been at one time among the disbelievers; and therefore I feel bound to record the fact, of which I was not formerly aware, that the Dezertas are uninhabited islands, and consequently that there is no domestic poultry there. At the same time I wish I could hear of some ornithologist visiting these barren rocks at the breeding-season, and putting the matter for ever at rest.

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* I have not seen the paper said to have been published by this naturalist in the 'Edinburgh Journal of Science,' 2nd ser. vol. i. p. 229, and am only acquainted with that in the 'Zoological Journal,' vol. v. pp. 70–79.

The geological relations of the existing fauna and flora of the Atlantic isles and the European continent have, as far as known, been treated by much abler hands than mine; and I can scarcely hope to add any reflections on the subject which are worth the printing. Yet hitherto the birds of these interesting groups (the only relics of an Atlantis which ever had a real existence) have been entirely neglected from this point of view. I cannot persuade myself that an examination of their ornithology would be void of result; and I would here beg to offer one remark on the peculiar distribution of the species of the genus *Fringilla,* as now restricted by most ornithologists. It contains six very well-marked forms; and the following list exhibits their breeding-range, as well as I can ascertain:—

1. *F. montifringilla*; Northern Europe and Asia.
2. *F. cœlebs*; Europe and Asia, from lat. 68° N.
3. *F. spodiogena*; Algeria.
4. *F. moreleti*; Azores.
5. *F. tintillon* *; Madeiras, Canaries, Cape de Verde Islands?
6. *F. teydea*; Canaries.

Thus showing that one-half of the known species are confined to the Atlantic Islands—a fact suggestive enough to those who are acquainted with the deductions inferred from similar cases by Professor Edward Forbes, Mr. Wollaston, and, chief of all, Mr. Darwin.

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* One of my fellow-passengers informed me that some difference was observable between the specimens of this bird killed in the northern and southern parts of Madeira. I hope to obtain confirmation of this.

In connexion also with this topic, I would remind my readers of Mr. Wollaston's admirable remarks on the effects of isolation and exposure to a stormy atmosphere upon the insect-world *. I fully believe that similar effects are to be traced among birds; and, if I am not mistaken, the first and most apparent effect of the latter cause is an obscuring or darkening of the plumage. We have examples of it in our own country. Few of our native birds attain the brilliant hues observable in their Continental brethren. When do we ever see an English Yellow Bunting or a Bullfinch as brightly coloured as a French or, still more, a German one? The dark back of our Pied Wagtail has led it to be described as a species distinct from the Continental *Motacilla alba.* Our Long-tailed Titmouse is equally deserving of a like recognition. I will say nothing here of the *quæstio vexata* of the difference between *Lagopus scoticus* and *L. albus*; for in that case probably other causes have come into play. If we go to the other extremity of the Palæarctic region, we find the same thing occurring. *Orites trivirgata* differs from the Continental *O. caudata,* just as our own Long-tailed Titmouse does. *Accentor rubidus* bears the same relation to the Continental specimens of *A. modularis* as our own Hedge-Sparrow. In a word, several, perhaps many, British forms are repeated (I do not say exactly, but to some degree) in Japan. If I am right, how can the fact be reconciled with the doctrine of the continuity of specific areas? Simply, I imagine, by similar conditions obtaining in localities so far apart; and the most obvious of these similar conditions I take to be the prevalence in both localities of an insular, as opposed to a continental, climate. Mr. Vernon Harcourt has already remarked that "all the birds of Madeira are darker than their European brethren;" and I can, of my own knowledge, confirm his statement in several instances. The variation here observable is very much greater generally than in the case of

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* "Variation of Species," p. 70 *et seq.*

British as distinguished from Continental forms; and Mr. Wollaston has pointed out the probability of variation being dependent on the length of the period through which isolation has lasted. It is, accordingly, well to examine the evidence afforded by geology. Professor Edward Forbes supposed that the Madeiras and other Atlantic islands were the summits of a Miocene continent *; and Sir Charles Lyell has quite lately declared his belief that, "waiving all such claims to antiquity, it is at least certain that, since the close of the newer Pliocene period, Madeira and Porto Santo have constituted two separate islands" †; while he further asserts that the naturalist is "entitled to assume the former union, within the post-pliocene period, of all the British isles with each other and with the continent" ‡. It, therefore, appears to me that the differences of variation observable between the birds of the British islands and Madeira respectively and those of the Continent of Europe are exactly in accordance with these statements.

The foregoing remarks I have made only in the hope of showing how much more remains to be done by the ornithologist in the Madeiras. I must now recount my own impressions, formed during my short stay of two days. On October 20th, 1862, I left Southampton, a passenger on board the Royal Mail steam-ship 'Tamar.' We had a rough night of it going down channel, and the following morning found ourselves at anchor in Torbay, where our captain determined to wait till the spell of bad weather was over. How it rained, and how it blew, and how those on board managed to kill time, I need not here say. The scenery of that beautiful bay, to me so familiar, was generally obscured; but every now and then one obtained a glimpse of some well-known feature, bringing back lively and pleasurable reminiscences of more than ten years since. One agreeable circumstance of our three days' detention was the recognition of a party of old friends, whose acquaintance it had been my good fortune to make several years before in far distant latitudes. A company of about thirty Pomatorhine Skuas (*Lestris*

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* Geol. Survey of the United Kingdom, vol. i. pp. 348–350, and p. 400.

† The Antiquity of Man, p. 444.

‡ Ibid. p. 277.

pomatorhinus *) were in close attendance on our ship, and about as many more round each of two other craft, weather-bound, like ourselves. They were very tame, coming close alongside the quarter-deck in quest of food; and dire was the strife, and loud the contention, as one lucky bird after another seized on some choice morsel and conveyed it far astern to devour it at leisure. Late in the evening of the 23rd the wind shifted, the glass rose; and shortly before midnight we had our steam up, our anchor weighed, and we were rounding, first, Berry Head, then the Start, and then were fairly on our course for Funchal. The next few days were passed as days are commonly passed at sea. We had favourable weather, and the passengers came gradually creeping up on deck, as flies show themselves in the first sunny days of spring. Two or three Gulls—apparently Kittiwakes (*Rissa tridactyla*)—occasionally convoyed us; and the various persons on board slowly fraternized. I was gratified to find several representatives of zoological science among my companions,—Mr. William Hinton, to whom Mr. E. Vernon Harcourt was indebted for many ornithological facts, as recorded in his earliest paper; Mr. J. Y. Johnson, who has lately pursued the subject of Madeiran ichthyology with as much zeal as success; and Mr. Robert Swift, the well-known conchologist of St. Thomas, West Indies. On the 28th, about noon, we were boarded by a pretty Saxicoline bird, no doubt a South-European species, and, I should suppose, either *Saxicola stapazina* or *S. aurita*; but as it was to all appearance a young bird in the first plumage, and I am not acquainted with either form in its immature dress, I could not be certain. It was tame enough, but declined to take any notice of a few crumbs of bread (all I had to offer by way of hospitality); and it did not stay with us very long. About 5 o'clock in the evening, land was announced on the starboard bow, which our captain recognized as Porto Santo. By the time I got on deck it was shrouded in a heavy raincloud, and required some amount of faith to believe in its existence. Later it became much plainer, and we ran by it, then sighted Madeira proper and the Dezertas, and finally dropped our anchor in Funchal Roads about midnight.

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* I fully accept Herr Preyer's derivation of the name of this bird, commonly written "*pomarinus*," and Dr. Sclater's emendation of the same ('Ibis,' 1862, p. 297).

Next morning, looking out of the port-hole, the first thing that attracted one's attention was the intensely blue water—so blue as to appear almost opake. The sky was clouded, and the hills above the town draped in mist. Our steamer was surrounded by gay-looking boats, stocked with live turtle, bananas, and neat wicker cages crowded with canary-birds. The moment an unwary passenger showed himself in the waist, a general chorus of tawny boatmen in indifferent English invited him to go ashore. By the kindness of one of our fellow-voyagers, horses had been ordered for my brother, my nephew, and myself. When we got on to the beach, and had satisfactorily concluded the wrangle, inevitable in such cases, as to boat-hire, the rain began. We paddled about the town for a couple of hours or more, as the idea of starting on a ride was absurd. We looked into the fruit-market; were offered a string of semiputrid Quails by a man in the street (said Quails being decidedly darker in colour than our *Coturnix dactylisonans*); visited the Convent of Santa Clara, whose inmates have an ornithological turn, since they make very pretty artificial flowers out of feathers; and finally inspected the Fort, which is defended by certain soldiers of His Most Faithful Majesty and a glacis covered with prickly pear. From the ramparts a good view of the town is obtained; but what I looked at more was some three or four couple of small dark Swifts (*Cypselus unicolor*), which were wheeling to and fro under its walls. Beautiful little birds they were, and a very good living they seemed to be making, judging from the constant rapid jerks in their flight, and the abundance of small insects that, in spite of the rain, filled the air. At length the sun shone out, and in desperation we determined no longer to defer our ride. Accordingly the horses were brought out, and off we started at a gallop, each of us being accompanied by a man (a *burriqueiro*) whose business it is to hang on by the tail. The first mile was over the stones, and up a hill so steep that, having some regard to my reputation for veracity with the readers of 'The Ibis,' I shall refrain from mentioning what I believe to be its angle of inclination. I can only say I do not think I ever rode (much less gallopped) up a more tremendous ascent. Each side of the road was bounded by high walls, festooned and overhung with brilliant flowering plants; but every here and there one obtained a look-out. The rain came on again, more heavily than before, accompanied by a storm of wind; and we several times had to take shelter from it. At length we arrived at the Church of Nossa Senhora do Monte, upwards of 1900 feet above the sea, which forms so conspicuous an object from the bay. Here we turned sharply to the right, the weather improved, and after emerging on a comparatively open country, arrived at a spot which the fragments of broken glass showed to be a favourite picnic-ground. A beautiful prospect was before us. At our feet lay Funchal, with its heights all dwarfed; to the eastward the craggy Dezertas, the home of a thousand Petrels, looking unspeakably desolate, notwithstanding the golden glare with which their peaks were lit up; and extending far away to the south and west nothing but the calm sea, overshadowed here and there by a passing cloud. After enjoying this view for some little time, we turned our horses' heads, presently stopping at a small cottage—a *venda*—where our attendants begged a draught of wine. Horrible stuff it was, manufactured, if our tastes could be trusted, chiefly of rum and raisins. Fine Spanish chestnuts and thriving pinasters were dotted about; and passing down a rocky gully, a Buzzard (*Buteo vulgaris*) flapped slowly from the top of a half-dead tree. At length we reached the object of our ride—the Curral dos Romeiros, a secluded valley, placed among a multitude of wild ravines. A small stream ran at the bottom, and made its exit, sparkling in the light, through a narrow gap. Crossing this, we ascended the opposite side, disturbing two or three more Buzzards; and, finally, striking the Caminho do Palheiro, were soon in the town, where we re-embarked on board the steamer.

Next morning we were on shore again betimes. A kind friend, who had invited us to breakfast, met us on the Praza, and accompanied us to his own house. I took a seat in an ox-sledge, which is the form of vehicle that in Funchal represents the Hansom cab of the British metropolis. The streets are paved with small flat pebbles, set edgeways, over the well-worn surface of which these sledges glide easily, their progress being assisted, like those at Amsterdam, by the occasional application of a greasy rag to the runners. Notwithstanding this precaution, however, so heavy is the draught up the steep hills, that the poor beasts were constantly down on their knees. At length we arrived at our friend's house, a pleasant *quinta*; and having done justice to his hospitality, and admired the view from his garden, we started on our expedition to the Curral dos Freiras. The day was beautiful. As we rode on, the strangeness of the scene struck us with increasing force at each succeeding step. On each side were fields of corn or sugar-cane, cabbages or yams, or sometimes a vineyard that had survived the ravages of the *Oïdium*, studded with orange- or apple-trees, and intersected by hedge-rows of fuchsias or blackberries; while overhead were fig-trees and pines, poplars and dates, enough to confuse for ever one's notions of geographical botany*, and rivalling the odd jumble of the classic "Groves of Blarney." We passed over a comparatively low range of hills to the north-west of the town, when a wonderfully bold headland, Cabo do Girão, upwards of two thousand feet in height, appeared on our left; then a deep ravine, the channel of the Ribeiro dos Socorridos, spanned by a viaduct of almost Roman proportions. About the streams of water, whether natural or artificial, were numerous Grey Wagtails (*Motacilla sulphurea*), a species I had long known, on Mr. Hewitson's authority, to be found in the island. Flocks of Linnets (*Linota cannabina*), the cock birds with their breasts still crimsoned, rose twittering cheerfully from the furze-bushes and cactus-thickets by the road-side. In the air were poised dark-plumaged Kestrels (*Tinnunculus alaudarius*, var. *rufescens*, Sw.), occasionally dropping down, I presume in quest of the lively little Lizards (*Lacerta dugesi*), of which plenty showed themselves on the dry stone walls. As we gradually reached a higher level, we were favoured by a repetition of yesterday's rain. At length, passing by the Jardim da Serra, and through a wood of Spanish chestnuts, which no doubt would have been picturesque had we been able to see it, we emerged at the foot of a steep slope overgrown with coarse grass. Here we got off our horses, and were each set upon by a couple of natives, who seemed to think it impossible for an Englishman to reach the top without hoisting him up. Partially availing ourselves of their assistance, we arrived there after a little trouble (for the grass was wet and slippery), and found ourselves on the brink of a tremendous crater-like gorge, occupied by a bright rainbow, far, far, below us. A magnificent sight it must be in fine weather; but the clouds filled the valley beneath, so that its bottom was hardly discernible, and clung obstinately to the mountains above, only for a few moments breaking to reveal Pico Grande, the highest point of the island. Being by this time wet through, we thought it advisable to retrace our steps. Riding down hills is generally worse than riding up them. Here it was awful work, but we at last accomplished it without mishap. We returned by a different route, crossing the valley before mentioned much lower down, over a fine bridge and a half-finished causeway leading to a level new road—a gratifying change after the ups and downs we had encountered. I went to visit a gentleman (Dr. O'Herlehy) who, I had been kindly informed by Mr. Johnson, was great bird-fancier, and in whose house I hoped to see examples of the curious variety of the Blackcap (*Curruca heinekeni*, Jard. & Selby) and other Madeiran birds alive. Unfortunately the Doctor was not at home, and, what made it worse, had the key of his pets with him. Then, following my companions, we went on board ship; and about an hour after sunset, amid the blaze of blue-lights, the 'Tamar' steamed away, and Madeira vanished into a memory.

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* It will, of course, be understood that nearly all the prevailing plants are introduced species.

Elveden, February 28, 1863.

XX.—*Note on the Eastern-Asiatic Thrushes of the Genus* Turdus. By P. L. Sclater.

In Mr. Swinhoe's paper on the ornithology of Hongkong, Macao, and Canton ('Ibis,' 1861, p. 23), he mentions "a species of Red-wing, with grey-olive back in the male, and orange-tinted flanks," as "abundant, especially in the Camoëns Garden, Macao, where they were nesting." Unfortunately the specimen forwarded to me as supposed to be of this species did not really belong to it, but proved to be the young of *Turdus cardis*, as I stated in a note to Mr. Swinhoe's paper (*ibid.* p. 37). In the large series of Chinese skins, however, which Mr. Swinhoe has brought with him on his recent return to this country, are several examples of this fine Thrush from Macao, which fully vindicate its claims to be considered as a new and very distinct species. For this very interesting addition to the Asiatic group of true Thrushes, I have Mr. Swinhoe's kind permission to propose a name; and I therefore call it, from its discovery in the Camoens Garden,

TURDUS HORTULORUM, sp. nov.

♂ Supra obscure cinereus, alarum pennis extus fuscis; subtus albus, fascia pectorali lata plumbea; abdominis lateribus et subalaribus læte cinnamomeo-rufis; gutture laterali et fascia pectoris nigro maculatis; rostro et pedibus flavis.

♀ Supra fuscescens; fascia pectorali nulla, sed in hac parte, sicut in gulæ lateribus nigro-maculata, rostro fusco.

Long. tot. 8·5, alæ 4·5, caudæ 3·0 poll. Angl. et dec.

Hab. In Chinâ meridionali.

The rich cinnamon under wing-coverts render this fine species of Thrush easily distinguishable from every other known Chinese species, except *Turdus cardis* in its immature dress; but in *Turdus cardis*, of which Mr. Swinhoe has a very large series, the flanks invariably show black spots more or less. In *Turdus chrysolaus*, which has similar cinnamomeous flanks, the under wing-coverts are pale cinereous.

Mr. Swinhoe supplies me with the following extracts from his note-book concerning this Thrush:—

" *Amoy*, 18*th Jan.* 1859.—Shot a new species of Thrush this morning, with a grey breast. It was hopping about among the dead leaves of the garden picking up worms. It uttered to itself occasionally a low chuckle.

" Cinereous-breasted Red-wing, ♂. Length 8½; wing 4½; tail 3; tarsus 1·1; mid toe 1·2; hind toe ·7; bill, along culmen, ·7; to gape, 1·1; irides deep hazel; legs ochreous flesh-colour; bill yellowish brown, with yellow rictus; upper parts deep smoke-grey, tinged on the head and back with olive-green; wings and tail wood-brown, more or less tinged with olive;

throat yellowish white, spotted with light blackish arrow-heads, which darken and form into a line on each side, with a light orange patch on each side of under nape; breast smoke-grey, blotched with faded brown; under wing-coverts, flanks, tibiæ, and a line across the lower breast fine orange-buff; bill and under tail-coverts pure white."

"*Amoy, 6th March,* 1861.—Another male of the above, with the breast-band not fully developed; bill light brown; legs and toes brownish flesh-colour, darkest at joints of toes; angle and inside of mouth orange-yellow."

"*Amoy, 2nd April,* 1861.—Old female of the above procured, without breast-band. Length 8; wing 4·4; tail 3. Bill dusky yellow ochre, patched on the tips and base of upper mandible with light brown; angle and inside of mouth bright yellow; eyelids pale yellow; legs, toes, and claws brownish ochre, washed with yellow, conspicuously so on the under tarsi. This, on dissection, proved an old female, with numerous eggs in ovary; epithelium of gizzard of a dusky yellow, rugose, containing remains of grubs and beetles."

In my article on the geographical distribution of the genus *Turdus,* published in this Journal in 1861 ('Ibis,' 1861, p. 277), I have allotted only six species of Thrush to the column of China. Mr. Swinhoe's discovery of the present species adds a seventh to the list; an eighth will be *Turdus ruficollis* (which Mr. Swinhoe's Red-tailed Fieldfare turns out to be*, not *T. naumanni* as I had anticipated); and a ninth, *Turdus naumanni,* of which a fine adult Chinese example has been already figured in last year's volume (Pl. X.). Mr. Swinhoe's explorations in Formosa have also resulted in the discovery of five species of Thrush visiting that island. I have a specimen of *Turdus chrysolaus,* from Manilla, lent me by Mr. Gould, which further extends the range of the true *Turdi* (as visitants) in a westerly direction. The present amended table will show at a glance the general distribution of the Thrushes of Eastern Asia, as far as we are at present acquainted with it—the names printed in *italics* signifying that the species are only winter visitants to the countries to which they refer.

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* See above, p. 196.

Japan.	N. China, from Shanghai northwards.	S. China, from Shanghai southwards.	Formosa.	Luzon.
fuscatus	fuscatus	*fuscatus*	*fuscatus*	
	naumanni	*naumanni*	*naumanni*	
	ruficollis			
daulias	daulias	*daulias*	*daulias*	
pallens	pallens	*pallens*	*pallens*	
chrysolaus	chrysolaus	*chrysolaus*	*chrysolaus*	*chrysolaus.*
		hortulorum		
cardis	cardis	*cardis*		
sibiricus	sibiricus	*sibiricus*		
		mandarinus.		

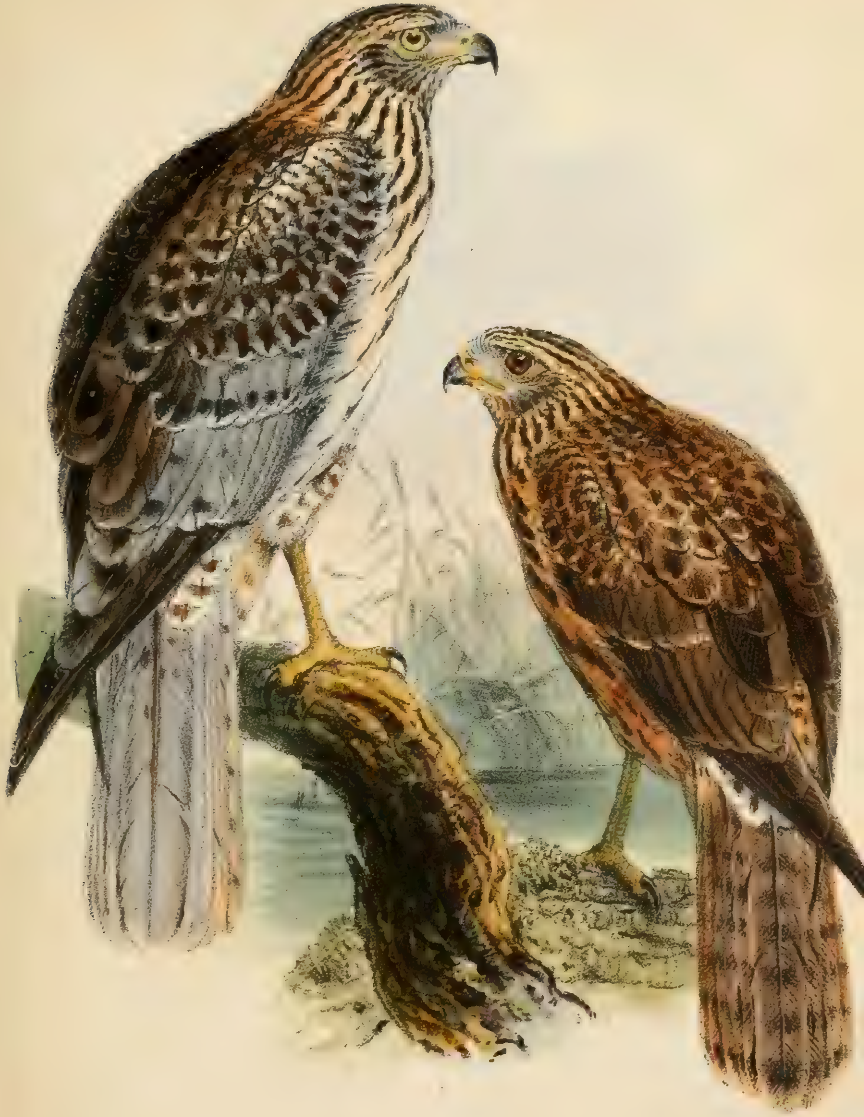
XXI.—*The Ornithology of Formosa, or Taiwan.*

By Robert Swinhoe, F.Z.S., F.G.S., &c.

(Plate V.)

At the time when our forefathers, of blessed memory, tattooed their bodies a sky-blue, and ranged the woods at large in a state of nature, and all Europe was sunk in savagedom, we are informed by Chinese records that certain of the Mongolian hordes had settled down into partial civilization, had built themselves houses, constructed boats for the lakes and rivers, and small coasting-vessels for the sea, and, in fact, had already commenced to make progress in the development of arts and sciences. The children of the future empire were then divided into numerous petty states, each with its king, but all united in one common protective federation. At last one ambitious monarch, possessed of more power than the rest, by intrigues and conquest, absorbed all the other petty states, and established an empire, which, in the course of several centuries, changed hands a number of times. But we do not here intend to follow the Chinese through their various dynastic struggles: we pass them all at a leap, and pick ourselves up in the dynasty before the reigning one, viz. that of the Ming; for it was during this period that the Chinese first became aware of the existence of such an island as Formosa. They had had sea-going vessels for centuries, and were in the constant habit, as Marco Polo

Ibis 1863, Pl



J. Wolf, del. et lith.

M & N Hanh

CIRCUS SPILONOTUS.

tells us, of making voyages to India through the Straits of Malacca. They had, moreover, possessed the compass, and knew well the use of it; but they were then, I presume, as they are now, timid mariners, and feared to venture out of sight of land. This, however, can scarcely be alleged as an excuse for the lateness of the discovery, as, on a clear day, the mountains of Formosa can plainly be discerned from the opposite coast of China. For whatever reason it was so long delayed, it was reserved for a eunuch of the court of the Emperor *Suen-te* (A.D. 1430) to be the first man to visit it. This individual was bound on an homeward voyage from India, and, falling across a typhoon, got blown on the island. While the crew were engaged in repairing the damaged vessel, he employed his time in taking notes on the advantages of the new land, and in collecting herbs and simples. He shortly after arrived safely in China, and laid a full report of his discoveries before the Emperor. But it was not for the Ming dynasty to plant a colony on the *terra incognita.* The Ming fell away before the conquering Mantchoos, who installed the present or *Ching* dynasty (whence the name *China*). In the 42nd year of *Kia-tsing* (1564), when the present provinces of Canton and Fokien were still independent kingdoms, constant struggles prevailed, both by land and sea, between the usurping Tartars and the natives of the free states. In one of the sea-fights the Tartar admiral gave chase to the enemy, who ran for refuge into the large harbour of the Pescadores, or *Punghoo.* The Tartar was delighted at his discovery, and took possession of the islands in the name of his Emperor. The enemy, who is reported to have been a pirate from the kingdom of Canton, fled to the further shores, where, in the intricate navigation of the numerous shoals, he eluded the Tartar; and having recaulked his vessels, it is said, with the blood of the unfortunate aborigines that, in their innocence, came to render him assistance, he returned to his native land. The Tartar Emperor deputed a governor to the little group of islands; and farmers and fishermen soon began to emigrate thither with their families. In the first year of *Tien-ke* (1620) a Japanese fleet passed down the coast of Formosa; and finding the neighbourhood of the present city of Taiwanfoo a promising locality, they resolved to establish a colony there. Soon after a Dutch vessel, bound on a Japanese voyage, was wrecked on the shore. The Dutch contrived to get permission from the Japanese to select as big a morsel of land as they could cover with an ordinary cow-hide. The permission being gained, they cleverly cut the hide up into thin strips, and enclosed a site of several acres on what was then an island close off the mouth of the river. On this they built a fort (A.D. 1634), called the *Castel Zelandia*, which stands to this day. The Japanese got disgusted, and deserted the island, whereupon the Dutch built another fort higher up on the north bank of the river. This fort also stands; but the river has dwindled into a small shallow stream, the island has become united with the land, and the fortress, some way from the banks, is at present in the heart of the large straggling city of Taiwanfoo, enclosed by its walls, marking well the changes that so short a lapse of time has wrought in the configuration of this constantly rising coast. The struggle for mastery continued hot and strong between the Tartars and the natives of Fokien, when a merchant, well known by the name of Koksinga, who had risen from small means and amassed a fortune by trade, equipped a fleet of vessels, and sailed against the Tartar navy. In the first several battles he was victorious; but being at last worsted, he determined to leave the cause of his royal master, and seek to establish a kingdom for himself. Numbers of Chinese had ere this emigrated to the Dutch portion of Formosa, which had become a flourishing colony and place of call for Netherlands ships trading between Java and Japan. The Dutch had also before this time established themselves in various other parts of Formosa, and had introduced missionaries into the island with a view to convert and civilize the aboriginal tribes, whom they found peaceful and docile. They had built a fort on the Tamsuy river, which is also still standing; and they had expelled a small settlement of Spaniards and Spanish priests, who had built a small fort and located themselves at Keling, on the north coast, as they considered the whole island virtually their own. In the 17th year of *Shun-che* (A.D. 1661) Koksinga sailed for Formosa. He first visited the Pescadores, and wrested those islands from the Dutch, who had previously expelled the Tartar governor and established themselves in a fort, which still remains. Leaving 100 vessels of his fleet to guard these new possessions, he continued his voyage with the remainder. He arrived off Fort Zelandia, which was defended by only eleven Hollanders, assisted by numerous Javan troops and aborigines. There were also four Dutch vessels anchored off the fort. Koksinga's fleet mustered 900 sail; but the Dutch defended themselves so gallantly with their guns, of which the Chinese had none, that the latter could make no impression. Koksinga at last hit upon a plan which succeeded. He set fire to some of his junks, and set them adrift among the Dutch vessels, thereby burning them. He then demanded the surrender of the fortress, and permitted the Dutch to sail away in the remaining vessel. Such is the Chinese account of the expulsion of the Dutch from Formosa; but the old Dutch records represent the event as attended with considerable butchery and cruelty. The conqueror sent some of his fleet up the coast to garrison the fortresses at Tamsuy and Kelung, and established his court at Fort Zelandia. He did not, however, live long to enjoy his newly-acquired territory, for death snatched him away after a reign of one year and nine months. Upon this the island fell to his son, who, in the twelfth year of Kanghe (A.D. 1673), crossed over with a fleet to the assistance of the King of Fokien against the Tartars, but, on the Fokien King claiming to himself a higher rank, took offence and declared war against him. He defeated the King of Fokien, who abandoned his territories to the Tartars; and he then returned to Formosa, where he soon after died. He was succeeded by his son, a boy of tender years, under the regency of two ministers, his particular friends. The Tartars abolished the kingship at Fokien, and appointed a viceroy, in the 21st year of Kanghe (A.D. 1682). The first viceroy, *Yao*, offered an amnesty to the Formosan colonists if they would shave their heads, in submission to the Tartar rule; and their young monarch was requested to visit the Emperor at Peking (the court of the Mantchoos, the Emperors of the previous Ming dynasty having held theirs at Nanking). The young king, on the advice of his regents, acceded to the request, and, on his arrival at court, was honoured with the rank of Chinese Count, and detained for life at Peking; and Western Formosa, or Taiwan, was placed under the government of the Mantchoos, and became a district commanded by a Taoutai or Prefect, under the Viceroy of the province of Fokien, in the 22nd year of Kanghe (A.D. 1683), as it remains to this day.

The island of Formosa, lying between north latitude 25° 20′ and 21° 54′, of an area about equal to the half of Ireland, was first designated by the name it now bears by the Portuguese, from the beauty of its scenery; the Spaniards applied to it their word with the same meaning—Hermosa. It is termed by the Chinese *Taiwan* or Terrace Bay, which name was first applied to the once small island off the capital. The whole island, as we before noted, was, some two centuries back, in the hands of wild tribes of the Malay type, who were divided, according to Dutch records, into a vast number of petty communities, each ruled by its king or chief, and speaking different dialects. The lapse of time has wrought a great change in the condition of the inhabitants. The Chinese emigrants from Amoy, Chinchew, and Swatow, with a small number of Cantonese, have possessed themselves of almost the entire western seaboard, as far south as lat. 22° 20′, up to the foot of the mountains, which run north and south, and nearly divide the island in half. The Chinese territory continues round the north coast, and on the east side down to Sawo, lat. 24° 37′. It will thus be seen that on the west side the savage has been driven almost entirely from the coast to the refuge of the mountain fastnesses, on which the colonists are daily encroaching. On the east he still enjoys a long line of coast; but it is so steep and precipitous, destitute of harbours, and bounded by a fathomless ocean, that the Chinese make no attempt to possess themselves of it. On this coast there are a few sandy nooks, with barred-up mountain-streams, whence small fishing-boats issue on to the sea. These boats are plied by the few Chinese who make a living among the savages; for the aboriginals are too wild and too proud to stoop from the chase to such menial work. The savages still maintain their distinctness of tribes and dialects; but they have sadly dwindled in number, and will continue to decrease before the sturdy advance of the colonist, who clears the hills of the forest and exterminates the beasts of the chase. But another and perhaps more effectual cause of their rapid diminution is the constant feuds carried on by adjacent tribes, chiefly with a view to try their skill at arms, and prove the prowess of their youth, who are compelled, by their laws, to present the lady of their choice with the head of an enemy before they can claim her for a bride. Another destructive cause is the law for preventing women from becoming mothers till they are thirty-six, all previous to that age being compelled to produce abortion. Between the territories of the savage and those of the Chinese there is generally a few acres of common land in which barter is carried on, and which bounds neither side are allowed to cross. On the range of mountains inland of Tamsuy there is a copper-coloured race, called the Kweiyings, whom I visited and found to be a short, sturdy, good-looking people, of somewhat of the Malay type. The men go about nearly naked, with merely a short jacket to the waist, and a rag round the loins. In winter they wrap themselves up in plaids. They wear pieces of wood through their ears, as well as rings made of shells, and glass-bead necklaces, and carry their hair long and parted in the middle. The women wear long wrappers round their loins, and jackets, and wrap their heads in blue turbans. They also wear ear-rings and necklaces. The unmarried men and women tattoo a square mark on the forehead, the married men also on the chin, and the married women right across the face, from ear to ear. Their language contains many words allied to Malay. These people, I was informed by some, occupied the greater part of the mountain-range; and certainly those we met at Chock-e-day, on the east coast, lat. 24° 7′, in 1857, when circumnavigating the island, more resembled the Kweiyings than the Kalees, who are a darker race, more allied in appearance and language to the Tagals of the Philippines, and inhabit the south end of Formosa. But it is not improbable that there are yet other races in the country intermediate between these two; and in the higher mountain-range, which attains to a height of 12,000 feet, I am led to believe that a race of Negritos still exist. When at Sawo and the adjoining plains on the N.E. coast, we found several villages of what the Chinese called "cooked" or civilized savages, who were living in harmony with the colonists, and turning their attention to agriculture. The numerals of their language were identical with those of the Kalees of the south; but they had canoes and two Spanish words, the one for "horse" and the other for "buffalo," which would appear to show that they must have had some connexion with the old Spanish settlement at Kelung. At present they are dwellers on plains, and entirely isolated, by nearly a hundred miles of mountains, from the region of the Kalees. Their language otherwise does not agree in the majority of words. There is yet another race that I met when at the city of Taiwanfoo, who had shaved their heads, had intermarried with the Chinese, and had become almost identical with them. These people are called *Pepos*; they speak quite a distinct language, and declare themselves descendants from the soldiery brought to the island by the Dutch. I may add that, from a vocabulary of a so-called "Favorlang" language of Formosa, translated from the old Dutch by Dr. Medhurst, there must have existed another race of Malays which I did not fall in with; and this, as well as other Dutch accounts, induces me to believe that there were formerly several other distinct races of Malays in the island, of whom probably small remnants still exist in the vast range of mountains between those of the Kweiyings in the north and the Kalees in the south, though doubtless, what with the encroachments of the Chinese colonists on the one hand, and the constant internecine war carried on by the various cramped feudatories, some of the tribes may ere this have ceased to exist.

The Chinese reckon their territorial acquisitions in Formosa politically as a *foo* or district of the province of Fokien, and depute thither for its civil government a Taoutai or Prefect, with extraordinary powers. He is virtually responsible to the Viceroy at Foochow, but has permission, on all important subjects, to memorialize the throne direct. The district of Taiwan is divided into four *hiens*, or counties, and five *tings*, or marine magistracies. They are, the Fungshan Hien, comprising all the Chinese territory south of the capital city, Apes' Hill included; Taiwan Hien, comprising the capital and surrounding country;

thence southward, Kia-ne Hien and Changhwa Hien respectively. The Taifang Ting presides over the sea-board of Taiwan Hien and Fungshan Hien; the Loo-keang Ting over that of the two other counties. Further north we have the Tamsuy Ting, comprising the north coast, from lat. 24° 33′ to the N.E. corner. The Komalan Ting includes all the acquired territory on the east coast as far down as Sawo; and the Panghoo Ting extends over the group of islands called the Pescadores, off the west coast. From July to the middle of November I collected in the counties of Taiwan Hien and Fungshan Hien, both of which, for the most part, consist of one vast alluvial plain, interspersed with a few solitary hills, not exceeding 2000 feet. There are high mountains in the background, but these I did not visit. This part of the country is highly cultivated with rice, sugar-canes, &c., interspersed with fine groves of bamboos and other trees. Inland, water is abundantly supplied by ponds and numerous small rivers, which, however, choke themselves before debouching into the sea, and are useless for navigation. From December to the 9th May I passed in the Tamsuy Ting, on the north-east coast. There we had a moderately fine river, winding down from a long chain of high mountains, which are said to run nearly north and south, and to divide Formosa into a flat low country on the west and a rocky mountainous country on the east. The neighbourhood of Tamsuy abounds in small valley-plains, well watered and cultivated, but for the most part in hills and undulations, all, however, cleared of their pristine verdure, and now covered with coarse grass, with an occasional hill-side patch of wood. The hills in the immediate vicinity do not exceed 3000 feet; but the river gives communication to the lofty forest-covered range of mountains, which are plainly visible on clear days, the furthermost covered with snow as late as April. The highest mountain in Formosa has been set down as 12,000 feet. It is to this mountain-range, which I visited, and over which my hunters constantly rambled, that I owe most of my novelties. As far south as lat. 24° 30′ the country on the west coast partakes of a similar character to that prevailing at Tamsuy. Below this the ground is less undulatory and more flat until you reach lat. 22° 25′, when the hills again approach the sea. The north coast is undulating and mountainous; but on the east, from lat 25° as far as Sawo Harbour, you have a large plain, with a few small rivers. South of Sawo the coast is very lofty and precipitous, with occasionally a sandy valley opening out into the sea. There are no harbours on this dangerous side, and apparently no shore. Up this entire length of east coast we have the Pacific warm or gulf-stream, called by the Japanese the *Kuro-siwo*, which, passing the north-east corner of our coast, takes a turn, and warming the northern shores of Japan, spreads itself out to temper the Californian and the western coast of America. To this ever north-flowing warm stream we owe the six months' almost incessant rain that prevails during the winter at Formosa. Whenever the N.E. monsoon blows strong (and that is too frequently the case in winter), the warm vapours of this stream saturate the wind, and induce incessant precipitation on our land and about twelve miles to seaward. The rain-line does not extend much beyond this, and the monsoon passes to the Chinese coast as a dry, cool, bracing breeze. The temperature in summer rarely rises above 100°, and in winter, on the sea-level, seldom falls below 40°. In autumn, every afternoon, masses of storm-clouds regularly every day roll northwards along the mountain-chain, accompanied with loud roars of thunder, fearful flashes of lightning, and great sultriness of atmosphere in the plains, on which the clouds at that season do not often burst. The coast of Formosa is too well known for its stormy character, for every typhoon or gale that visits the Chinese coast gives us first the benefit of its violence. During my short stay at the capital, I experienced two severe typhoons and several heavy gales. Between Tamsuy and Kelung are the great coal and sulphur mines for which Formosa is justly celebrated, and on several of our hills there are indications of extinct craters; but there is no active volcano, to my knowledge, nearer than about the latitude of the capital. This we once witnessed smoking as we lay at anchor off the coast. Notwithstanding its great heat, Formosa does not bear an entirely tropical character. We have no cocoa-nuts and no parrots. This was remarked by an old Dutch traveller more than a century ago, and it still holds good. But we have areca-palms, rattan-canes, sugar-cane, tea, and rice, as well as bamboos, longans, bananas, and mangos. Our large interior forests of camphor-trees give us one of the most lucrative articles of commerce; and our hills abound in another plant, the *Aralia papyrifera,* from which is extracted the so-called rice-paper on which those highly coloured Chinese drawings are executed, and of which the manufacture seemed such a mystery until it was discovered that it merely consisted of the careful paring of the pith of this plant.

But after all this, my ornithological readers would doubtless like to hear something of the proper subject of this paper. They will scarcely care to have me fill up the pages of the 'Ibis' with the statistics, commercial and otherwise, of the island. Indeed, I think I have already dipped rather too deeply into them. I will therefore pass at once to the birds. In this, my favourite class, I spared no pains or expense during my comparatively short stay in Formosa, but endeavoured to make as large a collection and gain as much information as possible. I employed a vast number of native hunters and stuffers, and collected very large series of every available species and their eggs. I am, therefore, enabled to offer a very fine list of the avifauna of this hitherto unknown island. I do not, of course, presume to say that Formosa has been thoroughly explored; this would be impossible for one man during so short a stay to accomplish; but I cannot help arrogating to myself the credit of having taken off the cream of novelty in this branch of science. A great deal yet remains to be learnt of the habits of particular species; and doubtless numbers of fine things still blossom unseen for the discovery of future investigators, and I trust not a few of them may fall to my researches on my speedy return to that scene of my consular labours. I cannot, however, help expressing my regret that ornithology, as a science, is so little cultivated, and that I myself have received much less encouragement than I naturally expected after all my earnest endeavours to bring to light the natural productions of a country hitherto almost entirely unknown to civilized men.

Let me now take a glance at the following list, and make a few remarks that have suggested themselves to me. First in order come the *Raptores diurni.* These are all also Chinese, with the exception of *Spizaëtus orientalis,* which later research will doubtless discover on the main. Of the Owls, the *Ninox* is also Chinese and Japanese, the *Scops semitorques* of general distribution throughout continental Asia, whereas the other two are peculiar to Formosa. I cannot undertake to discuss each group separately; my remarks must be more cursory. As in the mammalia, so among the birds, two facts appear pretty patent—that the animals of the plains and low country are, for the most part, identical with Chinese species, while those from the mountains of the interior are more of a Himalayan type, and in some cases too similar to be separated. In some of the birds of the plains, isolation has worked variation more or less marked. In the *Lanius shah,* for example, it is perhaps at its minimum; in *Drymoica extensicauda* it is a little stronger; in *Phasianus torquatus* it is noticeable, and that is all; in *Budytes flava* it causes a curious reversion to what may be considered the typical colour, that of the British variety *rayi*; in *Leucodiophron taivanum* it has worked out a distinct species, which, nevertheless, occasionally in the old, but more frequently in the young plumage shows indications of one common origin with the Chinese bird; in the *Pomatorhinus musicus* we have a greater advance still, if we can suppose it to be descended from the much smaller *P. stridulus* of China*.

Among the birds of the lower hills we have the *Bambusicola sonorivox,* which isolation has varied in distribution of tints, but not in voice or habits, from its near ally, the *B. sphenura* of China. In the mountain avifauna we have a long series only slightly connected with Chinese forms, with a strong tendency to the Himalayan, and in some cases either identical or so closely related as scarcely to justify separation. This fact is, I think, less singular than would at first appear, simply because we know next to nothing of the ornithology of the Chinese mountain-ranges of corresponding height to those in Formosa. Of Himalayan type there are no less than seventeen species, one of which (the *Herpornis xantholeuca*) is, in my opinion, identical with the Nepalese bird, and another (*Alcippe morrisonia*) has barely separable characters. The relation of Formosa ornithologically with Japan is comparatively almost at zero. I only discovered one bird (the *Parus castaneiventris*) that looks as if it had a common origin with the *P. varius* of Japan; for the *Treron formosæ* is perhaps as nearly allied to many others of that group as to the *Vinago sieboldii.* Many Japanese birds do occur in Formosa, but only as visitants, and in that capacity they also show themselves on the coasts of China. I fully expected, from the geological relation that Formosa is said to bear to the Philippines on the south and to Japan on the north, that the fauna of that island would be more or less connected with those countries; but in this my investigations have decidedly proved me mistaken. The fauna is, instead, of an almost entirely Himalayo-Chinese type.

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* *P. ruficollis,* Hodgs., appears to be more nearly related to the Formosan bird.—R. S.

I have been blamed by some naturalists for allowing Mr. Gould to reap the fruits of my labours, in having the privilege of describing most of my novelties. I must briefly state, in explanation, that I returned to England elate with the fine new species I had discovered, and was particularly anxious that they should comprise one entire part of Mr. Gould's fine work on the Birds of Asia, still in progress. On an interview with Mr. Gould, I found that the only way to achieve this was to consent to his describing the entire series to be figured, as he would include none in the part but novelties which he should himself name and describe. I somewhat reluctantly complied; but as he has done me the honour to name the most important species after me, I suppose I have no right to complain.

I have much pleasure in taking this opportunity to record my thanks to Messrs. G. R. Gray, Sclater, and Gould, as also to Mr. Leadbeater, for the kind assistance they have afforded me in lending me specimens and books required for the satisfactory completion of this paper.

1. PANDION HALIAËTUS, L. Chinese, *He-pew* (Fish-panther).

Ospreys are unusually common about the harbour of Tamsuy, and I have frequently seen no less than five at the same time scattered over the sand-spit that divides the mouth of the river. We disturbed one with a particularly large fish in his claws, with which he had great difficulty in soaring into the air. They were very shy of approach; but by a fortunate shot my constable managed to put a bullet into one with an ordinary fowling-piece, at a distance of something like 300 yards. This specimen, which was a male, measured 21 inches; wing $17\frac{1}{2}$ in.; expanse 56 in.; tail 8 in.; iris clear bright yellow, with a black line round it; bill black; basal edge of upper, basal half of lower, and cere bluish grey; inside of mouth light pinkish purple, with bluish white tongue; legs pale yellowish grey, tinged with blue; claws black; ear-covert small, round, scarce $\frac{3}{10}$ in. in diameter, the bone depressed below, with an oval slit occupying the centre.

This male specimen was somewhat larger than a male from the coast of China; but in both sexes I have found the Chinese birds smaller in every case than European examples.

2. Buteo japonicus, Schleg. Faun. Japon.

Occasionally seen; no specimens procured.

3. Milvus govinda, Sykes.

Milvus melanotis, Schleg. Faun. Japon.

Mr. Gurney considers our Kite to be the true *M. govinda* of Sykes, which occurs in India and its archipelago, together with a cognate form, the *M. affinis*, Gould; and he is of opinion that the two forms from these localities have been confounded together by naturalists. As in China, so in Formosa, from the south to the north this species abounds, seeking its food more on the water and marshy grounds than on the land. It hovers for hours over the shipping in harbour, watching for any offal or refuse that may be thrown overboard. It is a very foul feeder, is generally impregnated with a disgusting odour, and swarms with lice, and is therefore not a very enticing bird to any one possessed of ordinary sensibilities.

4. Falco peregrinus, L.

A fine male of this species was brought to me at Tamsuy, on the 20th March. It was quite fresh, only just having been killed by a native some miles up the river. I had much difficulty in inducing him to part with it, as he wanted the quill-feathers for a fan, and was particularly anxious to make "chow-chow" of its flesh. This specimen measured 16 inches; wing $12\frac{1}{4}$ in.; tail 6 in. Apical third of bill blackish indigo, fading and blending with the yellowish on the basal portion of the bill; cere and skin round the eye chrome-yellow; iris deep brown; legs bright chrome-yellow, with black claws. Stomach empty. In the membranes that enclosed the air-cavities over the kidneys were two or three long and a few small whitish *ascarides*; the largest measured about 11 in. long by $\frac{1}{12}$ in. broad.

This bird, like the Amoy variety, is rather darker on the upper parts than the generality of European Peregrines; but its under parts are very pale, and only scantily spotted and barred with black. Mr. Gurney considers ours identical with the European bird.

5. TINNUNCULUS JAPONICUS, Schleg.

Almost every country has its Kestrel; and where it occurs, it is generally the commonest of all Falcons. In Formosa this rule also obtains. One could seldom take a long walk without observing a Windhover or two, so frequently true to its provincial name. At Tamsuy, on the top of the old square-built Dutch fort, which has stood the wreck of time for the last two centuries, a pair of Kestrels made their home. Wandering about the face of the country during the day, in the evening they were regular in their return; and we were sure to see them, just as it began to grow dark, drop carelessly into one of the banyan-bushes that spring from the sides of the fort, and quietly disappear for the night.

6. SPIZAËTUS ORIENTALIS, Temm. & Schleg. Faun. Japon. pl. 3.

A fine female of this Eagle was brought to me at Tamsuy, on the 25th of March, from the interior. It had been shot while seated on a rock near a large pool; and from this it was wrongly inferred by the hunter that it was a Fish-Hawk. I learnt from the Chinese that it not unfrequently occurred on the hills, and that it preyed on hares and even occasionally on young deer. Mr. Gurney agrees with me in considering our bird identical with that figured in the 'Fauna Japonica' under the above name. I received the bird the day after it had been skinned, and was thus enabled to make the following note:—length 2 ft. 4 in.; wing 1 ft. 7 in.; tail 12½ in., of twelve feathers, somewhat graduated, giving a roundness to the tail; bill blackish grey, darkest on culmen and towards point; base of lower mandible pale bluish grey; extreme base, rictus, and cere light olive-green, somewhat greyish; inside of mouth light bluish grey; skin round the eye black; legs feathered down to the toes, which are light chrome-yellow; the claws very large, powerful, and deep greyish black, lighter towards their roots.

Prof. Schlegel considers this species, together with *Sp. limnaëtus*, Horsf., and one or two others, to be all referable to the one species, *Sp. cirrhatus*, Gm., the crest being probably only a mark of the full summer plumage, and falling out in the winter. Our bird, apparently an adult female, and shot in the early spring, shows no sign of a crest. It has the head and entire under parts rufous white, the ventral colour, under wing-coverts, and tibial feathers being more strongly rufescent, the latter being indistinctly barred with a deeper shade. The tail is long, nearly even, brown, somewhat indistinctly crossed with 12 broad bars, and tipped with whitish; and the tail beneath appears brownish white, barred with deep brown. The feathers of the upper parts are deep brown, margined with rufous white. The feathers of the head and nape are lanceolate. The upper tail-coverts are cream-coloured, barred with light brown. The greater wing-coverts are brown, margined and largely spotted with reddish white. The quills are blackish brown, the broad part of their exterior webs being brown, and their inner webs barred with whitish, which obtains on the greater part of the feathers as you proceed to the tertiaries. The under wing presents a large patch of a reddish white nearly throughout its entire extent.

7. MICRONISUS GULARIS, Schleg. Faun. Jap.

A young male of this species, brought to me from the interior on the 20th March, 1862, at Tamsuy, is the only proof I have of the existence of this bird in Formosa. It has been identified by Mr. Gurney. The species most usual about Amoy and Foochow is the *M. soloënsis*, Horsf., which may at once be distinguished, at all ages, from this species by its pure, unspotted, cream-coloured under wing-coverts. In the autumn *M. soloënsis* is very common about Foochow, whence it seems to migrate in small parties, touching the coast and Amoy, and wings its way probably to the Philippines and the Indian Archipelago. This, however, is an assumption for which I have no proof further than the fact of its coming from the interior of China to the coast, and then entirely disappearing. It is certainly found in Java, but whether also as a summer resident, I believe, has not been recorded. A female of *M. soloënsis* stands in the galleries of the British Museum, from Shanghai; and another was procured by Mr. Fleming, R.A., in summer, at Tientsin (North China). Our present species, *M. gularis*, Mr. Gurney considers identical with *M. virgatus*, Temm.; and if it really is so, its distribution must be far wider, for that species ranges throughout the peninsula of India. In Japan the *M. gularis* appears to occur abundantly, and I have a specimen from Amoy. About Hongkong and Canton I found another species breeding, which I recorded in the 'Ibis,' vol. iii. p. 25, where it was wrongly referred to *M. soloënsis*. Of this I have a specimen from Macao, and Mr. Fleming procured another at Tientsin. These Mr. Gurney considers probably new, unless they be referable to *A. nisoides*, Blyth, which he has not seen. I have an immature bird of a fourth species, peculiar for the remarkable elongation of the tibial feathers down the outside of the tarsus, which was caught on board a vessel near the Straits of Malacca. Mr. Gurney tells me he has another of this, procured at Malacca, and he believes it to be a good species not hitherto described. This last must not, however, be included in the China list; for we have not, as yet, met with it on that coast.

8. CIRCUS SPILONOTUS, Kaup*. (Pl. V.)

I observed a pair of Harriers beating over the rush-grown delta of the Tamsuy River, above the gorge, in March. I watched them for some time, but was unable to get within shot of them. The male appeared of a pied plumage; but the female was brown. I concluded, therefore, that it must have been the species that prevails in the neighbourhood of Amoy, rather than the true *C. melanoleucus*, Gmel., which ranges in Asia from India to Peking, and which I have also seen from the Philippines; for

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* Mon. of the Falconidæ, Contr. Orn. 1850, p. 59.

Mr. Gurney tells me that he is informed by Mr. Blyth that this latter species has, in the adult form, both sexes coloured alike. In the broad, flat, open country of the south-west, near Taiwanfoo, I observed another Harrier, which I took to be *C. cyaneus*, L.; but of the species I cannot be sure, as it might have been one of two cognate forms which are hard to distinguish from it at a distance, except by a most experienced eye. These are the Pale Harrier (*Circus swainsonii*, Smith) and the American Harrier (*C. hudsonius*, L.). The former of these has lately been procured by Capt. Blakiston on the Yangtsze River; and of the latter, specimens may be seen in the Leyden Museum, from the Philippines and Kamtschatka.

I procured no specimens of Harriers in Formosa; but as Mr. Gurney was anxious to have the *Circus spilonotus* figured, I have supplied a male and female, from the neighbourhood of Amoy, for that purpose. With reference to this species Mr. Gurney writes, "I have just compared three male specimens of *C. spilonotus* with three males of *C. melanoleucus*, and enclose you the measurements, by which you will see that *C. spilonotus* considerably exceeds *C. melanoleucus* in all its measurements; in addition to which, it has a much larger bill and stronger tarsi. In all these respects (as also in some degree in colouring) it approaches to an allied but still larger species, *C. assimilis*, Gould, of Australia. I do not think that *C. spilonotus* ever assumes the black plumage which characterizes the head, neck, back, and a portion of the wings of the adult male of *C. melanoleucus*. I have not been able to compare your female of *C. spilonotus* with a female of *C. melanoleucus*, the only (supposed) female which I have of the latter being an individual of the sex of which I do not feel sure.

	Total length (inches).	Wing from carpus.	Tarsus.	Middle toe and claw.
Circus spilonotus ♂ (3 specimens)	22–23¾	17¼–17¾	3⅜	2¾
Circus melanoleucus ♂ (3 specimens)	18	14½–15	2⅞	2."

I have unfortunately no measurements of *C. spilonotus* taken from birds in a fresh state. The only note I can find in my journals is the following, made on a male shot at Amoy, the 27th

December, 1859:—"Bill bluish black, paler on the base; cere light greenish yellow; eyes fine waxen or primrose-yellow; inside of mouth leaden blue; legs yellow-ochre, with black claws." The females of this species have yellowish-brown irides, and so much resemble those of the Marsh-Harrier (*C. æruginosus*) that Mr. Blyth identified an example I sent him as of that species; but as I had frequently seen individual brown birds in company with the pied ones, I was led to doubt the assertion. On the rush-grown sand-flats at the mouth of the Changchow River, near Amoy, these birds are particularly common during winter, but they are nearly always females. I do not know for what reason; but in this locality the adult male is peculiarly rare until the spring, when a few may occasionally be met with. In many points of habit this bird seems to connect the Harriers with the Govinda Kites, feeding largely on offal and carrion, as well as on Batrachians and small mammals. All these objects I have found in the stomachs of those I have dissected; but remains of birds never. In its heavy-sailing flight this species also more resembles Kites than a Harrier. They were such offensive birds that I did not care to preserve more than a few for identification.

Mr. Gurney writes me that he has seen specimens of *C. spilonotus* from Singapore, as well as from the Philippines.

Fam. STRIGIDÆ.

9. Ninox japonicus.

Strix hirsuta japonica, Schleg. Faun. Jap.

S. scutulata, Raffles.

An individual of this species used to come regularly every evening to my garden at Tamsuy, in the dusk of evening, during winter, and, perching always on the same branch of one particular tree, devour its meal, which generally consisted of some small murine mammal. I think I can be sure it was a *Ninox*, though I procured no specimens. In my former papers I have always set down the Chinese species as identical with the Indian bird; but since my return to England, Mr. Gurney has pointed out to me that ours is rather the Japanese species; and I now find, on comparison with Indian specimens, that the Chinese bird is larger, much deeper coloured, and differs in the shape of the wing.

10. Athene pardalota, n. sp.

I was about to set this small species down as *A. brodii*, Burton, to which it is very closely allied, when Mr. Gurney drew my attention to the dark spots that mark its flanks. Two pairs were brought to me from the forest-country. The sexes appeared to be coloured alike, the females, as usual in Raptores, being somewhat larger.

The bills of both sexes, when fresh, were light greenish yellow, patched on the sides with blackish; legs greenish flesh-colour; claws light brown, with black edges and tips. The tail consists of twelve feathers of nearly equal length, with angular tips. The measurements in inches are—

	Length.	Wing.	Tail.
Male	5	3	2
Female	6	4	2½

In *A. brodii* the three first rectrices only are cut out slightly on the inner webs; in ours the four first quills are very deeply indented. In the style of colouring the two species much resemble one another, but ours is at once distinguishable by the large black spots that ornament its white flanks.

Head olive-brown, spotted and barred with ochreous; a broad buff collar reaches from one shoulder to the other, with a large black spot on each side near the scapulars; rest of the upper parts a rich yellowish olive-brown, barred with buff and blackish, many of the scapulars below the surface-feathers being spotted with large white spots; quills hair-brown, some of the inner primaries and all the inner quills being tipped and spotted on their exterior webs with reddish buff; tail rich brown, tipped with buff, both webs of each feather having corresponding transverse spots of the same colour, which thus form five disunited bars across the tail, there being also an indistinct one at the base of the feathers (in *A. brodii* the caudal bars number seven, without counting the extreme basal one or the marginal one at the tips); lore and eyebrow white, the former giving forth stiff bristles, white at their bases, then black, attenuated, and often terminating in yellowish tips; chin, lower neck, and space under the auriculars white; breast and sides banded with black, whitish, and buff; belly, vent, and lower flanks white, the latter spotted with black; legs feathered to the foot, yellowish brown, banded with deep brown, except on the front of the tarsi, which is white; carpus and under wing-coverts lemon-coloured, the latter marked with blackish brown. As the bird attains to maturity, the buff markings on the head and lower parts become white, and the rich reddish tinge of the upper parts deepens into a deep olive-brown.

On a late visit to Leyden, Prof. Schlegel showed me another small *Athene* from Sumatra, also closely allied to *A. brodii.* This species, of which the Leyden Museum contained only one specimen, entirely wanted the buff shoulder-collar. It bore the name of *A. sylvatica,* Müller*.

Our little Owl is quite a forest bird, frequenting the wooded mountain-ranges of the interior. I never met with it alive, and therefore regret to say that I have no note on its habits.

11. Scops semitorques, Schleg. Faun. Japon. t. 8.
Sc. lettia, Hodgs.

A fine female example of this bird, and the only one I procured in Formosa, was brought to me on the 1st of April from the interior hills. It also occurs at Foochow, whence I have received numerous examples. The Foochow bird has been identified by Mr. Blyth as *Scops lempiji,* Horsf.; but then that gentlemen had probably only compared it with Himalayan specimens; and Prof. Schlegel assures me that all the skins he has seen from Hindostan are referable to *S. semitorques,* and not to *S. lempiji,* which is confined to Java and the Indian Archipelago. On a trip into the interior, near Tamsuy, I observed one of this species in the dusk of the evening. It flew out of a pine tree on to the roof of a low native house, and then, ruffling up its feathers, kept stretching forth its head and hooting. Its cries resembled the syllables *hoó-hoûat,* the first pronounced sharp and quick, the latter hoarsely and with more stress. In the dead silence of the night these sounds were rather startling, and might easily be understood to have a portent of evil by the unsophisticated mind. The Chinese, as most other partially civilized people, regard the Owl as a bird of ill omen, and dread its approach to their houses; but they also connect unclean animals with their ideas of sorcery and the healing art, hence large prices are often given for the bodies of Owls for the cure of various diseases. One common medicinal property attributed to Owls is that of curing pulmonary affections; and for this reason consumptive patients and old people troubled with rheum are often recommended by their medical advisers to indulge in owl-soup; but in most cases the young of *Bubo maximus* (a common bird in some parts of China) are preferred for this purpose.

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* [See Bp. Consp. p. 40.—Ed.]

12. Bubo caligatus, Swinhoe, n. sp.

Native name, *Ham-hay* ("enduring vacancy").

The only specimen I received of this handsome species was, when it reached me, in fine condition, with horns an inch long; but, owing to an unfortunate accident, the skin has got much injured about the head, and the feathers have mostly fallen out. I sent my example to Mr. Gurney, who would scarcely believe it to have been a horned bird, so similar is it to *Syrnium indranee*. It is quite unlike any of the horned species of Owls; I have therefore no hesitation in considering it new.

Skin round the eye greyish brown; bill pale ochreous white, washed with bluish grey, which deepens on the base of the upper and on the greater part of the lower mandible; exposed portions of the toes brownish flesh-colour, bases light ochreous; claws blackish brown, whitish at their bases; face-disks deep brownish ochre, whitish near the bill, with black-tipped bristles; throat, line round disk, crown, and upper parts deep brown, with a fine purple gloss conspicuous in some lights; a large patch of white on the underneck; axillaries, under parts, and leg-feathers brownish ochre, closely barred with brown, some of the breast-feathers being splashed with the same; quills brown, broadly barred with a deeper shade, and tipped paler, some of the smaller tertiaries and scapulars being barred with white and pale ochreous; tail brown, tipped with white, the two central rectrices with partial bars of a lighter shade, the rest with more determined bars, the thin portions on the inner webs being white; horns about an inch long, of the same colour as the crown. Length 21 in.; wing 15½; tail 10. The fifth quill the longest in the wing, the first seven being deeply indented on the edge of the inner web, the second to the fifth indented on the outer web; the first six quills are more or less serrated on the outer web, the two first most strongly. The underwing is ochreous white to a great extent, barred in places with various shades of brown. Tail composed of twelve broad feathers, rather narrower at their ends and rounded, the outermost about $\frac{3}{4}$ inch shorter than the central, all somewhat graduated, giving a round form to the tail when expanded. Feet closely feathered to nearly the end of the toes.

This species is found in the dark caverns that abound in the mountains of the interior, wherein it lies securely at rest during day, issuing out at night in pursuit of partridges, hares, and young deer. Such is the account given of it by the natives. I only once met with it; and that was in the dusk of evening, when we were marching rather rapidly over a mountain defile, some 3000 feet above the sea-level. I was first attracted by hearing a loud deep hoot proceeding out of a hollow between two large rocks on a prominence over our heads. On looking in the direction whence the noise came, I observed a large Owl fly out. It was getting late, and we could not tarry; so that I was not able to procure the specimen. I had not at that time handled an example, and therefore set it down as the *Bubo maximus*, noting, however, that the bird seen was much smaller and had a different hoot. This took place in June 1857, when I was assisting the officers of H.M.S. 'Inflexible' in their search for certain Europeans supposed to be held captives at the sulphur-mines near Kelung. It was not till May 1862 that I first procured a specimen. This bird is not more uncommon than the majority of large *Raptores*, but, owing to its shyness and the inaccessibility of its retreats, is particularly difficult to procure.

[To be continued.]

XXII.—*Recent Ornithological Publications.*

1. English Publications.

A short time ago we had the pleasure of announcing to our readers the prospect of that great desideratum, a manual of the ornithology of India, being at length supplied for the use of naturalists. We have now the gratification of being able to congratulate Dr. Jerdon on the completion of the first volume of this important undertaking, which will, we are sure, do much to influence the study of our favourite science in British India. Time after time have we been applied to to point out some book wherein descriptions of the birds of India might be found. Time after time have we been obliged to answer that no such work was in existence. As Dr. Jerdon observes in his prospectus, to obtain acquaintance with what had been already ascertained respecting the fauna of India, it was necessary to search through the voluminous transactions of learned societies and scientific journals; and, excepting to a few more favourably placed, even these were inaccessible. The completion of Dr. Jerdon's work*, of which the first volume is now issued, will put it in the power of every one to acquire at a small expense, and in a conveniently portable form, a manual of the birds of continental India, sufficiently complete to serve as a guide to the field-naturalist anxious to discriminate the species of birds he may observe around him, and also of very great value to the student as a book of reference in his cabinet. No one, we think, will question Dr. Jerdon's special fitness to engage himself in his present task, which will not, we may remark, be terminated until not only his 'Manual of Indian Ornithology' is completed but also a whole series of similar volumes relating to the other classes of Indian vertebrates. Dr. Jerdon has passed more than twenty-five years in India, and has been known throughout that time as an ardent cultivator of science and a frequent writer upon various branches of Indian natural history. In 1839, Dr. Jerdon commenced a catalogue of the birds of Southern India in the 'Madras Journal of Literature and Science,' and completed the same with two supplements after several years' devotion to his task. In 1844 he published a volume of 'Illustrations of Indian

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* The Birds of India; being a natural history of all the birds known to inhabit continental India, with descriptions of the species, genera, families, tribes, and orders, and a brief notice of such families as are not found in India, making it a Manual of Ornithology specially adapted for India. By T. C. Jerdon, Surgeon-Major, Madras Army. Vol. i. 8vo. Calcutta, 1862. (London, Smith and Elder.)

Ornithology,' containing a selection of fifty lithographs representing chiefly unfigured birds of Southern India. Besides these more important undertakings, Dr. Jerdon has written many articles on the various points bearing upon the ornithology of India in the scientific journals of that country, and has on more than one occasion shown the interest he takes in 'The Ibis,' by sending communications to these pages. Above all, Dr. Jerdon has the very great advantage of being able to speak of a very large proportion of the species of birds included in his present work from personal observation. During his quarter of a century's uninterrupted residence in India, he has diligently examined the fauna of the various districts to which his official duties have called him, and, with the exception of the North-western Provinces, Punjaub and Sindh, has traversed again and again the length and breadth of continental India. Mr. Blyth, well known as the greatest living authority upon Indian ornithology, has assisted Dr. Jerdon in the progress of the present work through the press, and, as we are informed in our author's preface (where a full and handsome acknowledgment of Mr. Blyth's great services to the cause of Indian natural history is given), "has added much valuable information from his own knowledge and experience." It is with great satisfaction also we learn that the Indian Government, who, we believe, up to the present time have done little in any way to aid the progress of science in India, have to some extent assisted the present undertaking. The late viceroy, Earl Canning, placed the author on special duty, with the view of giving him leisure to prosecute his researches in any quarter, and to devote himself to the progress of his book through the press; and the present viceroy, to whom the work is dedicated, has followed the worthy example set him by his predecessor.

We shall not now say more respecting this remarkable work, which, we believe, signalizes the opening of a new era of progress in the hitherto comparatively neglected field of natural history in our country's foreign possessions, but, in compliance with the author's invitation for assistance, we shall endeavour, on the final completion of the work, to give some sort of commentary upon it. Dr. Jerdon will believe us when we say that this will be done, not with the object of detracting in any way from the merits of his labours, which deserve our highest commendation, but solely with the view, which should be ever first present to the true follower of science, of eliciting the truth, and of enabling Dr. Jerdon, in a future edition, to correct and supply any errors or omissions that may be detected in the present. In the meantime we most cordially recommend Dr. Jerdon's book to the notice of his brother ornithologists, and more especially to all residents in India who may be inclined to devote a portion of their leisure to the study of one of the most attractive branches of natural history.

The 3rd Number of the 'Journal of the Asiatic Society of Bengal' for 1862 contains Mr. Blyth's report on the additions made to the Museum of the Society up to the month of February of that year. A large series of bird-skins, collected mostly in the Tonghoo district of the valley of the Sitang River, and on the route thither across the hills from the valley of the Irrawádi, contained several novelties—*Gecinulus viridis, Crypsirhina cucullata* and *Temenuchus burmanensis* (both already described by Dr. Jerdon in this Journal), *Anthocichla phayrii* ("a very remarkable thrush-like form"), *Pycnonotus familiaris,* and *Osmotreron phayrii.* A list of the names of the other species in Colonel Phayre's collection is likewise given.

In the 5th volume of the 'Transactions of the Royal Society of Victoria' (which we have only lately met with, although its contents appear to consist of communications made to that learned body in 1860) is a paper by Mr. A. Dobree "On the Nest and Eggs of the Coachwhip-bird (*Psophodes crepitans*) and of the White-fronted *Ephthianura* (*E. albifrons*), with some general remarks on the nidification of Australian birds. The nest and eggs of both the above-mentioned birds were unknown to Mr. Gould; and Mr. Dobree's description of them is very full and satisfactory. Mr. Dobree remarks, in regard to the "often-noticed scarcity of birds in Australia as compared with England," that one reason of this is "undoubtedly" that so many of the Australian species lay a much less number of eggs. "Amongst the commoner of the Australian birds, the Honey-eaters (*Meliphagæ*) average two, and some of the species lay only one solitary egg, the Wattle-bird (*Anthochæra*) two or three, the *Sericornis* tribe three, the *Zosterops* three, the Wood-swallows (*Artamus*) four, &c. This opinion is corroborated by the fact that the few exceptional species, the individuals of which are really numerous, such as the Common Quail (*Coturnix pectoralis*) and some of the Parrakeet tribe, are found to be great layers, the Quail producing from eleven to fourteen and the Parrakeets from six to fourteen eggs."

Messrs. Ansted & Latham's nicely got-up work on the Channel Islands* contains a list of the birds met with in the islands, and some few notes on the general character of the bird-fauna and its peculiarities. The Catalogue, which includes 198 species (a large number for so limited an area), many of them, however, probably merely stragglers, was prepared for the work by Mr. Gallienne, who says, "The Rook and the Jay are rarely seen here (*i. e.* in Guernsey), though they are both indigenous to Jersey." We had always understood that just the contrary was the case with regard to the first-named species, although we know efforts have been made to introduce it from England. "The Storm-Petrel breeds in large numbers at Burton, and a few on other rocks near Alderney. . . . . The Ring-Ouzel stays with us throughout the year, but, like the Missel-Thrush in England, is more plentiful in winter than in summer."

2. GERMAN, RUSSIAN, AND DUTCH PUBLICATIONS.

Wiegman's 'Archiv für Naturgeschichte' for the past year, besides the usual elaborate report on the progress of our favourite science for the previous year, from the pen of our good friend Dr. Hartlaub (which we assume, as a matter of course, that every ornithologist will refer to), contains an article by Herr Landbeck, of Santiago, in Chile, on the Coots of his adopted country†. Mr. Landbeck does not seem to be acquainted with

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* The Channel Islands. By David Thomas Ansted and Robert Gordon Latham. 1 vol. 8vo. London, 1862.

† "Ueber die Chilesischen Wasserhühner aus der Gattung *Fulica*, Linn.," von Ludwig Landbeck in Santiago, Arch. f. Nat. 1862, p. 215.

Dr. Hartlaub's masterly review of the species of this genus, published in the 'Journal für Ornithologie' for 1853, or with modern ornithological writings generally, so far as they bear on this subject. We are enabled to state, on the highest authority, that Landbeck's supposed new species, *Fulica rufifrons*, is *Fulica leucopyga* of Hartlaub's monograph, and that Landbeck's *F. chloropoides* is *F. stricklandi*, and Landbeck's *F. chilensis F. armillata* of the same work. "The original specimen of the very large *F. chilensis* of DesMurs and of Gay is certainly not the bird described under that name by Landbeck. The *Fulica chilensis* of Landbeck is the very common 'Focha de ligas roxas' of Azara. The true *F. chilensis*, of which the type is in the Paris Museum, has no red on the legs, and is altogether a larger bird.' Landbeck, however, gives an interesting notice of the colossal *Fulica gigantea*, which appears to occur only in the high lakes of Northern Chile, at an elevation of some 16,000 feet, among the Andes.

In the 'Bulletin of the Imperial Society of Naturalists of Moscow' for 1861 will be found some field-notes*, by Arthur Nordman, on the Amurian *Tetrao urogalloides*, the eastern representative of the Capercailzie of Europe. Mr. Nordman's hunting-grounds for this bird were in the neighbourhood of the Russian colony Staro-Michailowsk, on the right bank of the Amoor, about 200 wersts from the mouth of that river. The *Tetrao urogalloides* seems quite as different in its manners and customs, as in its plumage and structure, from *T. urogallus*; and those who are acquainted with the curious habits of the European bird during the pairing-season will read with much interest Mr. Nordman's excellent description of the different but equally singular behaviour of its Amurian representative during the same period.

Since we last addressed our readers, Dr. Schlegel has kindly forwarded the first part of the new Dutch Zoological Journal†, to which frequent reference is made in his 'Musée d'Histoire Naturelle des Pays-Bas'*, and of which Dr. Schlegel has already spoken in these pages (see *anteà,* p. 120). The first part of this work, which is issued under the distinguished editorship of Dr. Schlegel, Dr. Bleeker, and Mr. J. F. Westerman, commences with a paper by Dr. Schlegel, on the genus *Gracula.* Dr. Schlegel excludes *Gymnops calvus* of the Philippines and *Ampeliceps coronatus* of Tenasserim, and enumerates the following species of what he considers true *Graculæ.*

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* "Einige Beobachtungen über den Auerhahn am Amur," von Arthur Nordman; Bull. Imp. Soc. Nat. Mosc. xxxiv. p. 261.

† Nederlandsch Tijdschrift voor de Dierkunde, uitgegeven door het Koninklijk Zoologisch Genootschap Natura Artis Magistra te Amsterdam

1. *G. religiosa* of Lower India and Ceylon.
2. *G. venerata* of Sumbawa.
3. *G. javanensis* of Malacca, Java, Sumatra, and Borneo.
4. *G. intermedia* of Bengal, Nepal, and Tenasserim.
5. *G. lidthii,* sp. nov. ex patr. ignota.
6. *G. ptilogenys* of Ceylon.
7. *G. dumontii* of New Guinea and the Aru Islands.

Of each of these full descriptive characters, with accompanying observations, are given. We may remark that Mr. Wallace's lately *re*discovered *Gracula pectoralis,* of New Guinea† (P. Z. S. 1862, p. 164, pl. xx.), should be added as an eighth species to the list; and that, on the same distinguished authority, we can give the island of Flores as an additional locality for *G. venerata.*

A second ornithological paper is commenced in the same number, being a list, by Mr. Otto Finsch, of the Parrots living in the Zoological Gardens at Amsterdam. When this is completed, we propose to institute a comparison between it and that of the species living in the Zoological Society of London's Gardens, as given in their lately published catalogue‡ of the Vertebrata living in their Gardens. Meanwhile we may notice that

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onder redactie van H. Schlegel, P. Bleeker, en G. F. Westerman. Jahrg. 1, Afd. 1. Amsterdam, 1863.

* We much regret that, in our own notice of this new work (*anteà,* p. 105), we have inadvertently written *Gypaëtus* for *Gypo-hierax*—the latter being the form which Dr. Schlegel unites to *Haliaëtus.*

† See also Mr. Gray's critical remarks on the synonyms of this species, Ann. Nat. Hist. ser. 3. vol. x. p. 472, and Mr. Wallace's reply, *ibid.* xi. p. 15.

‡ List of Vertebrated Animals living in the Gardens of the Zoological Society of London, 1862. London, Longmans, 1862.

he describes a new species (of *Pœocephalus*), under the name *Psittacus versteri*, from Guinea, allied to *P. senegalus*. The plate of the new Pigeons of the genus *Ptilopus* referred to by Prof. Schlegel in his letter to us (*anteà*, p. 120), is given in the first Number of this work, but not the descriptions.

3. SCANDINAVIAN PUBLICATION.

Professor Sundevall has again contributed a valuable work to the Transactions of the Royal Academy of Science at Stockholm*, entitled "Ett försök att bestämma de af Aristoteles omtalade Djurarterna," Stockholm, 1862. The volume is a careful compendium of the Aristotelian natural history, compiled on a system which has not hitherto, so far as we are aware, been attempted in any language, and which enables the student at once to ascertain and gauge the amount of knowledge attained by the great master, on each species which came under his observation. The first portion of the work consists of a life of Aristotle, with especial reference to his opportunities for obtaining natural information, and a careful and lucid summary of his system, compared, step by step, with the conclusions of modern science, and shows how the grand outline of the map of nature, which it needed Linnæus and Cuvier to fill up, was traced with tolerable exactness by the mighty Greek. His divisions *ἔναιμα* and *ἄναιμα* correspond with those of Vertebrata and Invertebrata, and although the subdivision of the former into *ζωοτόκα* and *ὠοτόκα* is somewhat confused with the parallel separation into *ἄπτερα* and *πτερωτὰ*, it yet is marvellous how, in the far more recondite Invertebrate kingdom, Aristotle had a glimpse of the grand distinctions between Crustaceans (*μαλακόστρακα*), Cephalopods (*μαλάκια*), Molluscs (*ὀστρακόδερμα*), and Insects (*ἔντομα*).

Prof. Sundevall has certainly elucidated the *systematic conceptions* of Aristotle with greater clearness than his German predecessors in the same field, J. B. Meyer ('Aristoteles Thierkunde'), and Lenz ('Zoologie der alten Griechen und Römer'). The subsequent chapters are devoted to a summary of the account given by Aristotle of each species, arranged in accordance with the

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* K. Svensk. Vet. Akad. Handl. Band. iv. No. 2, 1862.

Linnean system, (1) Mammalia, (2) Aves, (3) Reptilia, (4) Insecta, with distinct Greek and Latin indices to each chapter, and appendices on the fabulous creatures. Every student desirous of ascertaining at once the knowledge possessed by the father of natural history on each species which came under his observation can thus obtain it at a glance. We can only regret that a manual so convenient for scholars in every country should not have been rendered more generally available by publication in a Latin rather than a Swedish dress. The identification of some of the birds may be questioned, and must depend on a careful comparison of the existing fauna of Greece and Asia Minor, which Lindermeyer, our best authority, has not yet accomplished in a satisfactory manner. We should not be disposed, ourselves, to transfer the *κύανος* of Aristotle from *Petrocossyphus cyaneus* to *Tichodroma muraria*, nor to assign the epithet *κορυδαλὸς* to the more northerly *Alauda arvensis*, probably confounded with *Galerida cristata* (*κορυδὸς*), in preference to the conspicuous *Melanocorypha calandra*.

4. PORTUGUESE PUBLICATION.

For the first time since the institution of 'The Ibis,' we have to record the appearance of ornithological matter in one of the languages of the Spanish Peninsula. Two papers, which claim some notice in these pages, have lately been published in Lisbon. Of one of them, an article by D. Jose de Souza "Upon the Birds of Portugal"[*], we know little more than the title, but we have taken steps to get further information concerning it. The second publication is a pamphlet in Portuguese, upon the different modes of collecting and preparing zoological specimens, by J. V. Barbosa du Bocage, the Director of the Zoological Section of the National Museum at Lisbon[†]. It commences with a sketch of the origin and history of the National Museum of Portugal, and of its spoliation by the French at the period of the French invasion. This act was accomplished under the superintendence of Geoffroy St. Hilaire himself, who, being sent out for that express object, packed up and transported to Paris everything deemed worthy of being added to the galleries of the Musée d'Histoire Naturelle in the Jardin des Plantes. Nor was any recompense awarded for this act of spoliation until quite recently, when, in 1859, mainly, we believe, through the exertions of S. Barbosa du Bocage himself, a series of duplicate specimens was obtained from the authorities of the Jardin des Plantes, which, to some extent, replaced what the unfortunate Portuguese lost in 1808. After an outline of the history of the museum since its establishment, our author proceeds to give full instructions how such of his countrymen as are willing may best assist him in the efforts he is now making to restore their national museum to its former preeminence, by collecting and remitting examples of animals of all classes. A list of the principal desiderata of the museum is then given, and finally a catalogue of the birds of Portugal, to which a few notes on some of the species is added. From this part of the publication, which mainly concerns ourselves, there is not much, we confess, to be gathered; but we trust that it may only be the precursor of a more extended work on the ornithology of Portugal. Such a publication would greatly add to our knowledge of the laws of distribution of European species and their varieties—a most interesting subject, which is, as yet, still in its infancy.

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[*] In the 'Gazeta Medical de Lisboa,' for July 16, 1861.

[†] 'Instrucções praticas sobre o modo de colligir preparar e remetter productos zoologicos para o Museu de Lisboa,' por J. V. Barbosa du Bocage. Lisbon, 1862.

5. American Publications.

Besides a new part of Mr. Elliot's monograph of the *Pittæ*, several ornithological pamphlets have reached us from the other side of the Atlantic since we last addressed our readers.

From Boston we have a "Catalogue of the Birds found in the vicinity of Calais, Maine, and about the islands at the mouth of the Bay of Fundy," which has been published in the 'Proceedings of the Boston Society of Natural History' for September last. This list was drawn up by Mr. George A. Boardman, but has been "rewritten in a systematic form," and communicated to the Society, by Mr. A. E. Verril. Little more than the names of the species (according to Baird's nomenclature), and the period of the year at which they occur, is given.

From New York Mr. Elliot sends us remarks, reprinted from the 'Annals of the Lyceum of Natural History of New York' for January 1862, on the occurrence of Barrow's Golden-eye (*Bucephala islandica*) within the limits of the United States. After noticing that several European species of Ducks had, within a few years past, been obtained in the New York market (namely, the English Widgeon, English Teal, and others), Mr. Elliot states that several examples of the Golden-eye had recently been found exposed for sale in Washington market, in company with specimens of the American Golden-eye (*Bucephala americana*), and proceeds to point out, with details, the differences between the two species.

At Philadelphia Mr. Cassin gives, in the 'Proceedings of the Academy of Natural Sciences,' a "Catalogue of the Birds collected by the U.S. North-Pacific Surveying and Exploring Expedition, in command of Capt. John Rodgers." The collection, which embraces 163 species, was made in different parts of the world—South Africa, China, Japan, and Western America. One of the most interesting localities visited appears to have been the Island of Tombaro, or New Ireland, where the following birds were obtained:—

Lamprotornis metallicus.
Eclectus linnæi.
Eclectus polychlorus.
Carpophaga van-wyckii, sp. nov.
Carpophaga luctuosa.

The series of sea-birds, especially of those of the Northern Pacific, appears to have been particularly fine, embracing such rarities as *Uria carbo*, Pall., *Uria arra*, Pall., *Phaleris pusilla* (Pall.), and a new large Petrel allied to *Fulmarus glacialis,* which Mr. Cassin calls *Fulmarus rodgersii,* from the South Indian Ocean. Mr. Cassin promises us further notes and figures of the more remarkable species when the part of Commodore Rodgers's Report relating to Natural History is published.

In the same number of the 'Proceedings of the Academy of Philadelphia' (p. 404), Mr. Elliott Coues describes the adult dress of *Æchmophorus clarkii,* one of the Grebes included in his previous Synopsis of the family, of which we spoke in our last Number (*anteà,* p. 107).

XXIII.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters:—

To the Editor of 'The Ibis.'

Hastings, January 8, 1863.

Sir,—My attention has just been called to a paper published in 'The Ibis,' No. XVI. Oct. 1862, by M. Charles Bolle, of Berlin, in which he describes what he imagines to be a new species of *Anthus*, and proposes to give it the name *Anthus berthelotii*.

My excuse for troubling you with some remarks on the claims of the bird described by M. Bolle to be considered as a new species must rest upon the reference M. Bolle has made to my delineation of the *Anthus pratensis*, Bechst., in my 'Sketch of Madeira,' Murray, 1851, and in the 'Annals and Magazine of Natural History,' vol. xii. p. 58, and vol. xv. p. 430.

M. Bolle introduces his reasons for establishing a new species, by saying that he has been apt to lay too much stress upon the power of climate to influence the tints of the plumage and the habits of birds. M. Bolle has doubtless observed that, in the climates of which he treats, the tints of the plumage of many of our common European species are considerably modified. I would instance the *Fringilla cannabina*, Linn., which retains its carmine plumage through the year; the *Larus argentatus*, Brünn., which obtains its mature garb at an earlier period than in Europe; the *Strix flammea*, Linn., which is somewhat darker than in Europe; the *Sylvia atricapilla*, Lath., which assumes sometimes so dark a hue as to have led Sir W. Jardine to describe it as a different species; with several other examples familiar to naturalists who have visited these semi-tropical regions. It is well known to travellers in Central Africa that all chemicals are so largely affected by the climate as to make photography impossible there; and, whether we can account for it or not, the fact remains that the chemical secretions which produce colour in the plumage of birds are in a greater or less degree influenced by the mysterious agency of climate. That the habits of birds are modified by climate is proved by the non-migration of the Woodcock, the Blackcap, the Swift, the Quail, the Petrel, and other birds from the regions of which M. Bolle writes.

M. Bolle rests his arguments in favour of establishing a new species, firstly, on some supposed peculiarity of colour. After having given a description of his bird, he adds, "Il reste à remarquer *qu'autant que je me rappelle* [the italics are mine], il n'offre point de grandes variations suivant la saison ou suivant le sexe, et qu'en aucun temps il ne présente la plus légère trace de vert." Now this is rather indefinite language for any one attempting to establish a distinct species—a matter in which the conscience of an ornithologist should be particularly tender, when it is considered what confusion has been induced by a too great readiness in authors to stand sponsors to species which could readily dispense with their well-meant offices.

As an illustration, I might take the *Columba trocaz,* which is described by Dr. Heineken in 'Brewster's Journal' as a new species, though it is doubtless identical with the *Columba laurivora* of Webb and Berthelot. Montagu fell into a like error in the case of his *Alauda trivialis,* which is no more than our old friend the *Anthus pratensis* after its autumnal moult.

M. Bolle does not enter into any particular description of the young bird of the year of his assumed species, nor does he tell us whether he has noted at what season of the year his specimens were obtained. All he tells us is that he has made a careful examination of several skins which he brought from the Canary Islands, and instituted a comparison, which he says had hitherto been neglected, between these skins and those of the true Pipit.

Secondly, M. Bolle urges that the size of his bird is smaller than that of the *A. pratensis,* and that the relative length of the claw in his specimen is greater.

I am quite aware of the difficulty of giving accurate descriptions of birds, and of the danger of trusting too implicitly to measurements if you have only prepared skins to rely upon; for, in spite of the greatest care, colours will fade, and skins will shrink, if, indeed, they have not been stretched or displaced in the process of preparing them. This led to my taking very accurate descriptions and measurements of birds *in the flesh,* in Madeira, in the year 1851. I append a description thus taken of the *A. pratensis.* In the summer of the same year I brought prepared specimens to England, and, with the late Mr. Yarrell, whose friendship I had the happiness to possess, I went through a minute comparison of my skins and the skins in his possession of the *A. pratensis* obtained in England and other parts of the world, and I was fortified by his veteran experience in concluding that the Madeiran specimens were in no degree entitled to be distinguished from specimens of the *A. pratensis* from other parts.

I agree with M. Bolle in thinking that "it is more than a probability, it is almost a certainty, that the Pipit of Madeira, which is figured in the catalogues of the birds of that island under the name of *A. pratensis,* is identical with the *A. berthelotii*" of M. Bolle. Indeed the words attributed by M. Bolle to Mr. J. Yate Johnson, and used to corroborate this opinion, are a verbal quotation, whether acknowledged or not, from my paper in the 'Annals and Magazine of Natural History,' ser. 2. vol. xv. p. 433.

Description of the Anthus pratensis *of Madeira, taken from specimens in the flesh.*

Anthus pratensis, Bechst.; Meadow Pipit. Portuguese, *Corre de Carninho.*

	inches.	lines.
Entire length	6	3
Length of bill from forehead	0	6½
" " gape	0	8½
Length of tarsus	0	10½
" hind toe, claw included	0	9
" tail	2	4½
From carpus to the end of the wing	2	10½

Upper parts greyish brown, in the centre of the feathers a mark of olive-brown, above the eye a yellowish-white streak; throat, vent, and under tail-coverts brownish white; the rest of the under parts white, marked with streaks of greyish brown; quills and tail rusty brown; the outer tail-feather white on the outer web, with a large conical mark of white on the inner web; the second tail-feather with a smaller conical mark of white on the inner web; bill brown on the upper mandible and tip, yellowish white at the base of the under mandible; feet light yellowish brown; hind claw slightly curved, about equal in length to the toe. Runs along the ground, never taking a long flight; inhabits the cliffs and fields near the sea, and the terras; utters a low note.

Yours, &c.,
E. V. Harcourt.

To the Editor of 'The Ibis.'

Sir,—On arriving at Mentone about the middle of last December, I set myself to watch the habits of the Rock-Martins (*Hirundo rupestris*), the presence of which during the winter in this sunny spot my brother has already noticed. My father and I often paid early visits to the rock-caves in which they passed the night, and watched their proceedings at their toilet, and I have compiled the following account from our notes taken on the spot.

All travellers along the Cornice Road between Nice and Genoa must remember the Pont St. Louis, the present frontier of France. This bridge is thrown over a magnificent gorge, the great limestone-rocks of which absorb during the daytime a great amount of heat; so that long after the sun has set, and even in the early morning before he has risen, they radiate heat to such an extent as to make their neighbourhood exceptionally warm. Under the shelter of these cliffs the lemon-tree appears to flourish best, and along their steep sides the Martins may generally be seen flitting rapidly to and fro in the daytime, while in some of the caves with which these rocks are honeycombed they pass the night. The places they choose are rather shallow hollows or fissures in the rock, facing southwards. On cold cloudy days they often return to their caves at intervals during the daytime, and in very bad weather some of them will even pass a considerable portion of the day in their roosting-places. During the night they huddle together in the inner recesses of their caves; but as soon as the morning light is tolerably advanced, they move out towards the outer parts of the cave, and sit there on ledges of rock preening their feathers, and occasionally flying out a short way to ascertain the temperature of the morning; often too, and that quite early, some will fly out to visit their companions who have passed the night in a neighbouring cave. Meantime, however, a pillar of light has been shooting up from the horizon, and at last the sun himself rushes from out the sea, tipping all the waves with light. His rays have been gradually spreading down from the mountain-tops over the olive-clad hills and along the faces of the rocks, until at last they begin to enter the cave. Then those of the Martins who have already seated themselves on the outer parts of the cave fly forth together, with a glad cry, into the sunshine, and chase the insects along the cliffs. Still, however, some are left in the cave; and often some of those who first flew out return and nestle again against the warm rock. Sooner or later, however, as the sun gains power, they all abandon their night's abode.

Their proceedings vary a good deal according to the state of the weather, especially depending upon the amount of light. I will now give the result of the notes taken during one morning's watching, which I think will serve as a fair sample of their operations at this time of year. The morning of December 28, 1862, was fine and bright, and consequently the Martins were rather early in moving. At 6.58 A.M., when I arrived, the Martins appeared quiet and huddled together in the interior of their cave. I believe that they then were in the position in which they had passed the night. Soon after 7 they began to move, many of them flying to and fro at the mouth of the cave. This continued more or less for some time, some of the birds flying out of the cave for short excursions, others going out of sight round a corner of rock, partly, I believe, to visit other Martins in other caves, but generally soon returning. By 7.20 they were more quiet, many being seated on the outer ledges near the edges of the cave, some apparently dozing, but most employed in preening their feathers. Soon after this another lot of Martins arrive, apparently from another cave, and nestle in with the rest. About 7.53, the rays of the sun having then penetrated some way into the cave, some fifteen birds leave it. These had been sitting near the outer edges of the cave, where the sunlight first arrives. Soon after 8 I left the cave, up to which time a considerable number of the birds had not yet taken their departure; but, from the experience of other mornings, I have no doubt that they soon followed the others.

On cloudy mornings they are much more reluctant to leave their roosting-places. In the daytime, if there be much wind, they choose the more sheltered side of the rocks, where they may be seen in flights of from forty to sixty, often poising themselves against the breeze with head and tail depressed, the latter spread fanwise and showing the beautiful white spots. On one windy, stormy day I saw them flying about the streets of Mentone. I was surprised to see them so far from their favourite rocks on such a day. I do not believe that they ever go any distance inland at this time of year. Martins have been frequently seen to the west of the Bay of Mentone, about Cape Martin and Roccabruna, but I believe these to be another lot roosting at or near Cape Martin. On this point, however, I cannot speak at all positively. These birds are, I am told, sometimes seen in the winter at Nice, which fact is mentioned by Dr. Bree in his 'Birds of Europe,' being, as far as I am aware, the only recorded instance of their having been seen in winter in any part of Europe, with the exception of Greece. I do not imagine that the number of the Martins wintering in the neighbourhood of Mentone could be much more than 150; certainly, I think, not under 100; but there may be more than I know of. They retire to roost from 4 to 4.15 P.M., varying according to the state of the weather, and observing much the same course of proceeding as in the morning, except that they seem to settle down into their places more quickly.

Yours, &c.,
M. WESTON MOGGRIDGE.

To the Editor of 'The Ibis.'

Norwich, December 15, 1862.

SIR,—On the 17th of November I received an adult specimen of Leach's Petrel (*Thalassidroma leachii*), killed on the previous day at Salthouse, near Cromer. On dissection it proved to be a female, measuring in length 7¾ inches; wing, from the anterior bend to end of longest quill-feather, 6 inches; leg 1 inch; middle toe and claw 1 inch. The stomach was filled with some fishy substance, not distinguishable. This species has been killed several times in Norfolk, but not, I believe, since 1849. The present example was shot on some brackish waters, which on Salthouse beach run parallel with the sea-banks, and, to use the expression of the beachman who sent it me, "appeared to be walking on the water."

Yours, &c.,
H. Stevenson.

To the Editor of 'The Ibis.'

Porto S. Giorgio (Italy), November 25, 1862.

Sir,—Reading in 'The Ibis' your repeated invitations to naturalists of all countries to second your endeavours by contributing to the pages of 'The Ibis' articles and information of every sort relating to ornithology, I have determined to send you some observations which I think very singular, and not unworthy of the readers of 'The Ibis.'

Several years ago I went on a shooting expedition on the Apennines, in the province of Ascoli, and precisely on the eastern side of Mount Vetore, or Vittore, which is situated between the Mountain of the Sibilla on the north and Mount Como or Gran Sasso of Italy on the south. In the course of conversation with some sportsmen of the village called Pietrare, I was told that on the summits of Mount Vetore are found birds, called the Birds of Mount Vetore (*Uccelli di Vetore*), which live in flocks, and of which, during the winter (when, on account of the great snow, they descend to the skirts), many are killed at one shot, and are very fat. They were (not very clearly) described to me as being a little larger than the Chaffinch (*Fringilla cœlebs*), white, with the wings and the tail white and black, and with the claw of the hind toe rather long. Thence I inferred that the birds in question were the Snow Buntings (*Plectrophanes nivalis*). At that time I was far from supposing that this bird inhabited permanently that locality.

This year (1862), in the month of August, shooting on the same ground, I resolved to ascend to the summit of Mount Vetore (above the level of the sea 8400 Italian feet, or about

2000 metres). This mountain is quite clear of wood, nor are even single trees to be seen. Towards the east the side of the mountain descends almost perpendicularly; and amongst the rocks are many Red-legged Partridges (*Perdix rubra*), and great numbers of Choughs (*Pyrrhocorax graculus*), which breed there. On the southern side, which is quite covered with grass, the ascent is easy on mules. In the ascent I only met with a few Meadow Pipits (*Anthus pratensis*), single or in couples. The mountain has two summits, one towards the west, the other towards the east, separated by a deep rent, at the bottom of which is a very small lake, named Pilate's Lake. I ascended the eastern summit. On the descent, at about 400 feet from the top, a flight of about thirty birds passed above my head, which I recognized directly to be the Snow Bunting (*Plectrophanes nivalis*), since some were entirely white beneath, while their wings and tail were white and black, and these must have been old males; whilst others, probably young birds or females, were whitish beneath, and those parts of the wings and tail which were black in the former in these were brownish. Their flight was undulating, and their note, though louder, resembled that of the Siskin (*Fringilla spinus*).

Much to my regret, I was not able to procure any specimen. The guides told me that these were the Birds of Mount Vetore (*Uccelli di Vetore*), and that shepherds frequently found their nests on the ground.

Next year I propose to make a careful search in order to procure the nest and eggs; and during the coming winter I hope to have from that locality some specimens of the species, of which I have in my collection of Italian birds a young specimen killed near Pisa, on the 18th of November, 1857.

I take this opportunity to acquaint you with a singular case of hybridism. In November 1861 I purchased in Florence a living bird which had the appearance of a Thrush, and in size, colour of the bill, legs, feet, and upper parts was quite like a Song-Thrush (*Turdus musicus*). The lower parts were almost entirely black, except the edge of each feather, which was of a light colour; round the neck it had a narrow ring of feathers of a yellowish white; on the belly were two or three white feathers, spotted with black, like those of the Song-Thrush; the feathers under the tail were quite white. After a short time the yellowish circle of the neck disappeared. In July of the present year it began to change the feathers of the lower parts, and in September it already resembled very nearly the Song-Thrush, retaining only a few black feathers on the breast, which shortly disappeared. I was in expectation of future changes, when early in October it escaped. It ate chopped meat and the flour of maize. In spring it did not sing; its *zit* was like that of the Song-Thrush.

I believe it to be a cross of the Song-Thrush and the Blackbird (*Turdus merula*).

Yours, &c.,
Dr. THOMAS SALVADORI.

The following extract is from a letter of Professor Baird, dated Washington, December 26:—

"Mr. Kennicott has returned from his nearly four years' absence in Arctic America. His last collections have not yet reached us, but will be here in a few weeks. They embrace many valuable things, especially in the line of eggs. On their arrival, I will write you further on the subject.

"Another item of intelligence is that Mr. Xantus, so well known by his labours at Fort Tejon and Cape St. Lucas, has just left Washington for Manzanilla, on the west coast of Mexico, in the capacity of U. S. Consul, to reside a year or two. He has taken out an enormous outfit, and is prepared to capture everything the country affords. He will undoubtedly collect thousands of skins of birds, and his collection will be the means of identifying the geographical distribution of Mexican birds with great precision. He will probably get many new and rare species; and if he extends his travels to the islands of Tres Marias, Locorro, &c., as is probable, the results will be still more important. We really know almost nothing of the west part of Mexico, north of Acapulco, no large collection having ever been made there. Mr. Xantus visited Mazatlan in the summer of 1861, and in a week's time got twelve new species of birds, including a *Saltator, Planesticus, Cyphorhinus, Polioptila, Buarremon, Thalassidroma, Spermophila,* &c."

Mr. Salvin writes from San José, in Guatemala (December 7, 1862), as follows:—

"I have all the collections of the wet season to send off this month; there are several additions amongst them. I have got the nest of the Swift I described to you in a former letter. Fancy a nest made of seeds of a grass, *glued* to the under horizontal surface of an overhanging rock, two feet long, with entrance at the end! I do not feel sure of the genus; it is not a *Chætura,* but more like a *Panyptila.* Perhaps, if new, *sancti jeromæ* might be an appropriate name for it. Since I last wrote, I have had a collection of three hundred birds from the Pacific coast: it contains a few additions, but no novelties, unless it be a Humming-bird; but this, I expect, is the *Amazilia cyanura* of Gould, whose specimens are from Realejo. It is a green *Amazilia,* with a steel-blue tail. During the last month I have done nothing in natural history, having been much occupied photographing the ruins at Copan. In this respect I have been more successful than formerly, and have brought away four dozen pictures of the various carvings found there. The ruins are most curious."

It would appear that the Tooth-billed Pigeon of the Samoan Islands (*Didunculus strigirostris*), which is of so great interest to naturalists, as being believed to be the nearest living ally of the Dodo, is not quite extinct, as has been said to be the case. It will be recollected that examples of this bird have hitherto only reached scientific observers on two occasions. The first of these was the specimen originally described by Sir William Jardine in the 'Annals and Magazine of Natural History,' and afterwards figured by Mr. Gould in his 'Birds of Australia' (vol. v. pl. 76). The second was upon the occasion of the visit of the United States Exploring Expedition to the island of Upolu, when two examples of this Pigeon were procured, as described by Mr. Cassin in his volume on the Zoology of that expedition (p. 281). It has been repeatedly stated that this curious bird has of late years become quite extinct, having been destroyed by the cats which had gone wild and infested the island. But, from a letter addressed by Mr. John C. Williams, H.B.M. Consul for the Navigator Islands, to Mr. G. Sprigg, Secretary of the Acclimatization Society of Melbourne, we learn that Mr. Williams had, after several years of unsuccessful efforts, managed to procure a single living example of this bird, and was intending to convey it to Sydney when he next visited the antipodean metropolis. Recent letters from Dr. George Bennett, of Sydney, who has greatly interested himself in the *re*discovery of this bird, also mention that a correspondent of his, who visited the Navigator Islands in November last, had ascertained that, although the bird was now totally extinct in Upolu, a few were still to be found in the island of Sawaii, the largest and most mountainous of the group, and that he (Dr. Bennett) had great hopes of being able to procure living specimens for the Zoological Society of London.

Mr. E. L. Layard has left New Zealand some months since, and returned to his old quarters at Cape Town, where he has received an appointment as one of the British Commissioners for the suppression of the Slave-trade. Mr. Layard has recommenced his labours in the South African Museum, and just issued the first portion of a catalogue of the collection, relating to the Mammals. We have received from him some very interesting ornithological notes collected in New Zealand and during his voyage home, which we propose to publish in our next Number.

Another of our Honorary Members, Mr. Edward Blyth, Curator of the Museum of the Asiatic Society of Bengal, has just returned to England after more than twenty-one years' residence in Calcutta. We trust that his health, which has suffered much of late years, will be quickly re-established by the change of climate.

THE IBIS.

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XXIV.—*Ornithological Notes from the Antipodes.*

By E. L. Layard.

In my last communication from Auckland, dated 7th October, 1862, I promised to send you some information respecting the land-birds of New Zealand; but I regret to state that the anticipations which I had been led to form of investigating the zoology of those curious islands have never been fulfilled; I can therefore say but little concerning the land-birds. During my few rambles in the forest, I found a singular dearth of animal life. Perhaps, in the course of two hours' walk, a single Black Robin (the Totoara of Haast *) would perch on the end of a spray close to my face, and peer into my eyes, as if wondering why I was fool enough to come there for specimens. With him would probably appear the Fan-tail Flycatcher, a bold pugnacious little fellow, who would hop on to the walking-stick in my hand, or fight so furiously with a leafy bough, if twirled in his face, as to allow himself to be caught by hand. Once or twice I saw the fine New Zealand Pigeon (*Carpophaga novæ-zelandiæ*); and once, when galloping along the road to the Waikato, the Kaka (*Nestor meridionalis*); but our journeys were always performed at a pace which precluded any chance of collecting.

I am indebted to a friend, Mr. Webster of Hokianga, on the north-western coast of the Northern Island, for much information and nearly all the birds I obtained; but his specimens are similar to those which casual observations, snatched as I went along, enabled me to identify on the south-eastern side. The Middle Island I did not visit, much to my disappointment.

* See 'Ibis,' 1862, p. 105.—Ed.

Mr. Webster writes as follows respecting the Kiwi:—"A fortnight ago a native, out shooting Pigeons, discovered a Kiwi's egg protruding out of a small hole at the root of a Kauri-tree; removing the egg, he put his arm, to the elbow, up the hole, and got hold of the parent bird. The egg and the bird I have secured. Does it not appear a strange position for the egg to be in? I have, in an enclosure, two male birds and the female mentioned; the latter is much the largest, and has the longer bill. The three birds are very sociable together: they retire to a dark box during the daytime, coming out punctually a little after sundown, when they commence searching for worms. They seem to possess the sense of smell very acutely, and never thrust their long bills into the earth without getting a worm. My birds are very tame, and were so from the first, feeding in my presence, and picking up worms and pieces of meat thrown to them. When satisfied, they retire to their box, and seldom appear again until next evening. During rain they do not come out.

"An old native, who professes to know something about them, states that they lay but one egg at a time. The nest is merely a hole scraped out by the bird, and generally about the roots of a tree, where the ground is dry; the egg is covered with leaves and moss, the decomposition of which evolves heat sufficient to bring forth the young. The process takes six months. When hatched, the mother, by instinct, is at hand to attend to her offspring.

"The egg is enormous in size, compared to the bird; that now in my possession weighs 16 ounces, and measures in girth 11 inches.

"As far as I can learn, there is but this one species in our district."

The Kiwis (five in number) forwarded to me by Mr. Webster proved to be *Apteryx mantellii*.

The Kingfisher alluded to in my last (*Halcyon vagans*) is common throughout the Northern Island; it fishes equally in salt and fresh water, and devours also grasshoppers and *Gryllæ* of all kinds, caterpillars, moths, and butterflies.

The Korimaka (*Anthornis melanura*) is also plentiful, and goes by the name of the "Bell-bird" among the colonists. At early morning and in the evening, while riding through the forest, their united voices—some clear and distinct, others mellowed by distance—have a very pleasing effect. As far as I could judge, each bird seems to utter but a single note at a time, though capable of using a great variety. Their concert is like a peal of bells, each bell emitting one clear, short note. The Korimaka feeds on the juices of flowers and small insects. I kept two alive for some time in an aviary; they fed in the same manner as the Tui (*Prosthemadera novæ-zelandiæ*), from a cocoanut-shell filled with bread plentifully saturated with sugar and water. Like the Tui, also, they all die in fits, dropping off their perch, with their feet cramped and distorted.

If a fly, moth, or *Cicada* happened to enter the aviary, the Tuis and Korimakas would dart down upon it, beat it for a moment on a perch, and, throwing up their heads, swallow the coveted morsel—wings, legs, and all.

There is another little bird, not uncommon about gardens, whose curious stridulous song is just like the creaking of an ungreased wheel of a barrow: so measured is its tone, that the listener, struck with the resemblance, seems to see the wheel turning, and to know the exact part of the revolution which will produce the sound.

A little red-headed Parrot (*Trichoglossus aurifrons*) is found abundantly about Wellington; but I did not observe it in the north of the island. It lives well in confinement; and I was informed by a lady, who had kept many of them, that they would breed in a cage.

But the bird that most attracts the eye of a stranger in the forest is the "Tui-tui." This noisy fellow is for ever on the move, either flitting about the trees or soaring in airy circles over the forest. This latter pastime generally comes off in the evening, and at first I thought was indulged in to procure food; but I found, on watching the birds more closely with a glass, that it was as much for sport as for food. Eight or ten may often be seen flying together over the trees, turning, twisting, throwing somersaults, dropping from a height with expanded wings and tails, and performing other antics, till, as if guided by some preconcerted signal, they suddenly dive into the forest and are lost to view.

The large Kite (*Hieracidea novæ-zelandiæ*) is not unfrequent, flying over the fields, hunting for larks or a stray chicken. It also haunts the rivers, preying on dead fish. I was told that a game-cock was seen to defend his seraglio against nine repeated attacks of one of these Hawks, each time meeting his adversary in his "stoop," knocking him over and spurring him gallantly: the Hawk eventually retreated. I saw a somewhat similar combat between the little *Hieracidea brunnea* and a Cochin "hen with one chick." The gallant mother threw herself between the pounce of the Hawk and her little one, and the former bounded off from her well-covered breast as from a mass of india-rubber, and fell to the ground, cowed and baffled: three times he came up to the attack, but finally flew off dinnerless.

On that curious and almost inaccessible island, the "Little Barrier," I procured a single specimen of an apparently very rare bird—the *Creadion carunculatus*. We were attracted to it by its harsh, disagreeable cry. I never saw but this one, which, unfortunately, was cut to pieces by the shot. It is said that the Kiwi exists in large numbers on this lonely island, but we did not see any tracks. The natives also affirm that on Cuvier Island, between the "Great Barrier" and the main island, there exists a *Tui*, or Parson-bird, with *red bands* instead of white. They have a tradition connecting this peculiarity with some murder committed on the island in bygone years, the particulars of which have escaped my memory.

The "Huia" (*Neomorpha gouldii*), ever a rare bird, is said to be almost extinct. The tail-feathers are still much sought after to adorn the heads of the chiefs. It is singular that birds not now so much used as food by the natives should be scarce and more wary than in olden times, when they formed one of the staple articles of diet. Can this arise from their fear at the *sound* of fire-arms?

Many birds were formerly captured simply with a snare at the end of a stick, which the Maori passed over the neck of the unsuspicious victim. Some species were speared, the native standing at the foot of a tree, and passing his weapon up through the branches till within half a foot of the bird's breast, when a sudden thrust sent the barbed point home, and the bird was drawn down transfixed on the spear, which was shortly after on its way up the tree again for the scarcely dead creature's mate.

The Kakapo (*Strigops habroptilus*) has all but disappeared from the Northern Island. The Weka (*Ocydromus australis*) is very scarce. Mr. Webster writes as if he had not seen it, and says, "I have been unable as yet to procure a specimen for you." I never succeeded in getting one during my ten months' stay in the Northern Island.

As much of our travelling was done by sea, I was enabled to note pretty accurately what birds frequented the coast. I saw *Diomedeæ exulans, chlororhyncha, melanophrys,* and *fuliginosa.* The Mutton-bird (*Puffinus brevicaudus,* Gould) is wonderfully abundant. *Daption capensis* is common. The Diving Petrels (*Puffinuria urinatrix,* Gould?) to the *north* of East Cape are very abundant; to the *south* I never saw them. Besides these, I observed Gannets, two kinds of Terns (*Sterna caspia,* and another with deeply forked tail and black head), Blue Petrels, three varieties of Cormorants, and two Gulls (*Xema jamesonii* and *Larus pacificus*).

In the marshes about Napier, on the east coast, are myriads of Ducks—*Hymenolæmus malacorhynchus, Casarca variegata,* and another which I cannot identify. Several Terns (differing from those already named, but which I recognized as figured by Gould), a few Sandpipers, and a beautiful grey-crested Cormorant with black spots on its back (also figured by Gould) complete my list.

Among the Sandpipers, a Godwit (*Limosa uropygialis*?), misnamed the "Curlew" by the colonists, abounds, and affords almost the only sport to shooters: they are delicious eating. I heard of 112 being killed at two discharges by some of the officers of H. M. S. 'Harrier.' The Black Oyster-catcher (*Hæmatopus unicolor*) is also much sought after as an article of "gibier."

I had almost forgotten the large blue Water-Hen (*Porphyrio melanotus*), which may be seen in vast numbers in all the swamps and reedy margins of the rivers; nor is the Bittern (*Botaurus melanotus*) uncommon. A single specimen of the White Heron (*Herodias flavirostris*) was shot near Auckland and brought to me.

I had a remarkably good opportunity of watching the motions of a Cormorant. I was standing on the Brittomart battery, overlooking Auckland harbour, and the bird was fishing in the shallow water below me, so that I could see him distinctly while *under water*. On diving, he progressed by means of his wings and webbed feet, using his tail as a rudder and an oar besides: this fully accounts for the length and stiffness of this organ in all these birds. He doubled as quick as any fish. I saw him shoot out his neck and capture his prey several times, on which he rose to the surface and swallowed it: he never pouched *below* water. Another time, while standing on a high cliff, I saw a Gannet (*Sula australis*) suddenly drop from a height into the clear water; and as he passed over a bed of sand, I could distinctly see every movement. The bird shot down in a slanting direction, wings half closed and tail compressed; he slid through the water as if propelled by the feet alone, his body swerving from side to side with the violence of the exertion, seized a fish some yards from the place of his entry, continued a slanting course upwards, shot into the air with a bound, and resumed his flight in a moment.

It is singular that no Swallows visit New Zealand. It cannot be that the islands are too distant from Australia, where several Swallows abound, because two, if not three, species of Cuckoo (*Eudynamys taitensis* and *Chrysococcyx lucidus*) perform the journey in their annual migration twice every year.

I left New Zealand on the 1st of August and sailed for Sydney. The birds observed *en route* were in no wise remarkable, the usual species found about the shores of New Zealand extending over to the coast of Australia. Neither need I allude to those seen between Sydney and Adelaide, or during a delightful trip in quest of Kangaroos and Black Swans as far as Lakes Alexandrina and Albert. Suffice it to say that the latter still swarm on both lakes literally in hundreds, and that two fell before my revolving rifle and are now safe in the Cape Museum. Of my delight at seeing black Cockatoos and white Cockatoos, gaudy Parrots and Wattle-birds, Semipalmated and Cereopsis Geese, in their own country, I must leave you to judge, and pass on to note the sea-fowl of our homeward voyage across a portion of the ocean but little traversed, namely that between Adelaide and Table Bay.

From Adelaide to Cape Leuwin, which we rounded on the 19th October, we saw but very few birds. An occasional Albatros (*Diomedea melanophrys*) or Mutton-bird flew round the ship, and then left us. The weather was fine, with a westerly wind; but after rounding the Leuwin, we fell in with a gale from the north-east. On the 25th, in lat. 30°, long. 107°, we lost sight of our last bird, an Albatros, and saw no more till the 8th of November—an interval of fourteen days, during which we picked up the south-east trade-wind and crossed into the tropic of Capricorn. On the 8th, being in lat. 22° 15′, long. 80° 18′, and 960 miles from Rodriguez Island (the nearest land), six Tropic-birds crossed over the ship, flying to the northward. This species, the *Phaëton phœnicurus,* breeds on Rodriguez and on some islands to the north of Mauritius. On one of these (Round Island, a curious volcanic boulder) I spent three days at the end of the year 1856, on purpose to inspect their nidification. They build among the rocks, at a considerable elevation, on the north-western side. The males and females sit indiscriminately on their one large egg, which is of a pale pink-purple ground, with dark specks; axis 2 inches 6 lines, diam. 1 inch 9 lines *. I procured very many, quite fresh, but found that they faded to a dirty purple on being blown or exposed to the light. The eggs are laid on the bare ground, without any nest. The young bird is white, barred minutely with black.

On this island I also procured the eggs of *Puffinus cinereus,* which breeds in holes, and those of the Black-and-white Noddy (*Onychoprion fuliginosus*) and of a Gannet. Those of the former measure, axis 2 inches 6 lines, diam. 1 inch 6 lines, and are of a dull white colour. The Noddy lays its brown-mottled egg on the bare ground.

On the 11th we crossed the tropic in lat. 23° 30′, long. 72°; and on the 12th were visited by a pair of Mother Cary's Chicken (*Thalassidroma wilsoni*).

15th, Saturday.—Again today some Mother Cary's Chicken. We are in lat. 24°, long. 75° 30′; and on the 16th, when 110 miles south of Madagascar, we saw one *Puffinus cinereus* and a large Tern of some kind.

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* Another specimen measures, axis 3 inches 1 line, diam. 2 inches.

On the 18th, several of the White-tailed Tropic-birds passed over us to the northward. This species (*Phaëton flavirostris*) breeds in Mauritius, in the inaccessible precipitous sides of some of the ravines. I often saw them from that curious projection called the "World's End" *, entering the crevices of the rocks on either side. It also breeds in hollow trees, and may be constantly seen flying over the forest and darting into the holes caused by the fall of rotten branches. The first pair I obtained had frequented a huge tree for some years. On striking the hollow bole, the birds flew out, and were killed by a right-and-left shot. I was too late in the season for the eggs.

On the 22nd, being 180 miles east of Madagascar, we at last fell in with birds again. I think I never experienced anything like the dreariness and desolation of this part of the ocean. Never in my many wanderings have I seen so few birds. What can be the reason of it? Not any want of food, as the towing-net always gave profuse returns of small Crustacea, &c. To-day we were visited by one *Diomedea exulans*, *Thalassidroma wilsoni* in abundance, and a single *Puffinus*.

25th.—This morning, while scanning a ship, I made out on the field of the glass vast numbers of what appeared to be motes in the sun, but half an hour's run showed that the motes were Noddies! Never having seen these birds at any great distance from land, and the captain having reported 190 miles from Madagascar (lat. 28° 30′, long. 43°), I inquired if any rock or shoal was supposed to exist here, and found we were close to a doubtful danger, called Belliqueux's shoal. As the birds kept constantly fishing in one place, I should think such a shoal really existed, but our skipper would not run over it to try for bottom.

26th.—*Puffinus* abundant.

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* The "World's End" is a curious sharp spar, caused by the junction of two ravines or volcanic rifts of great depth; it terminates the Government domain at Redui, the residence of the governors of the island, where I spent six pleasant and long-to-be-remembered weeks with his Excellency, Mr. Higginson and his charming family.

27th.—*Thalassidromæ melanogastra* and *wilsoni* abundant. We are 300 miles from land (lat. 30°, long. 38°), but have been honoured by our first visitors from land—four Sand-Plovers (*Charadrius inornatus*). Poor little things! they were dreadfully exhausted; and after flying round the ship several times, lit in the chains, where I had a good look at them with the binocular glasses. The wind has been northerly for some days, and, just before we saw the birds, we passed a huge log of timber covered with weed and barnacles. I fancy they might have rested and subsisted on this for some days after being blown off the land. In the evening two fine Albatroses, in full plumage, joined the ship.

28th.—This morning a live Rail (*Gallinula minor*) was brought me. It was caught in the morning watch, fast asleep on some hay stacked on the deck-house for the use of the cow. The straightest line to shore is 290 miles!—and yet this weak flier has come over this extent of water!

Several insects (*Libellulæ*, an *Agrostis*, and a *Geometra*) were caught flying about the ship; and in the afternoon, *Hirundo rustica* and *H. riparia* (or *paludicola*), one of each, flew about us for some time. Lat. 33° 20′, long. 31° 50′ at noon.

29th.—*Puffinus, D. exulans*, and *D. melanophrys*, common; so also on 30th, with the addition of *Prion vittatus* and *Procellaria æquinoctialis*, the Cape Hen, *for the first time.* Lat. 32° 50′, long. 29° 50′.

1st December.—35 miles from the Great Fish River's mouth. This morning, when loosening the mizen topsail, down fell a Bat, which I cannot identify with any known Cape species, crushed to death. The sail was furled early last night, when we were 40 or 50 miles from land. Birds plentiful. Mother Cary's Chicken most abundant; I should say, 200 or 300 in sight at once. I never saw so many together, except in 1843, on my voyage out to Canada, when, off Anticosti, they appeared in similar flocks. I used to shoot them from the bowsprit as they crossed the bows, and then a friend caught them up with a net tied at the end of a long pole as they floated by the ship's side. How rarely do these birds alight on the water! I have sat and watched them far into the night, and still they kept on their unwearied flight; and after the moon sank, I could distinguish their querulous cry when their tiny forms were no longer visible. I know no greater enjoyment than lying securely in the netting under the jib of a nice vessel and scanning the birds as they pass—the Flying-fish darting up from before the rushing prow, and the *Medusæ, Velellæ, Physaliæ,* and other "monsters of the deep" gliding silently along. The naturalist may indeed exclaim with the Psalmist, "O God, how wonderful are thy works! in wisdom hast thou made them all."

2nd.—Off Cape St. Francis, but out of sight of land. Four Turnstones (*Strepsilas interpres*) came off to us, and our first and, as it proved, *only* Cape Pigeon (*Daption capensis*); Cape Hens abundant. From this time all our old Cape friends appeared, the first Gannet turning up off Cape St. Sebastian, in company with a Gull in his first year's plumage. The little Petrels waited on us till we rounded "Green Point," which we did on the morning of the 9th; and as if to welcome me back to my old place, a shoal of Dolphins came tumbling and gamboling round the ship. While we rowed ashore in the port boat, which my old friend Wilson, the Port Captain, brought out ever so far to pick up "the Curator," a flock of Penguins (*Spheniscus demersus*) came up, grunted a "How do," and, turning "tail on end," went on with their fishing below. A few moments after, the hearty welcome of crowds of friends and the sight of old familiar faces made me forget I had been away from the Cape for nearly sixteen months.

XXV.—*The Ornithology of Formosa, or Taiwan.*

By Robert Swinhoe, Esq., F.Z.S.

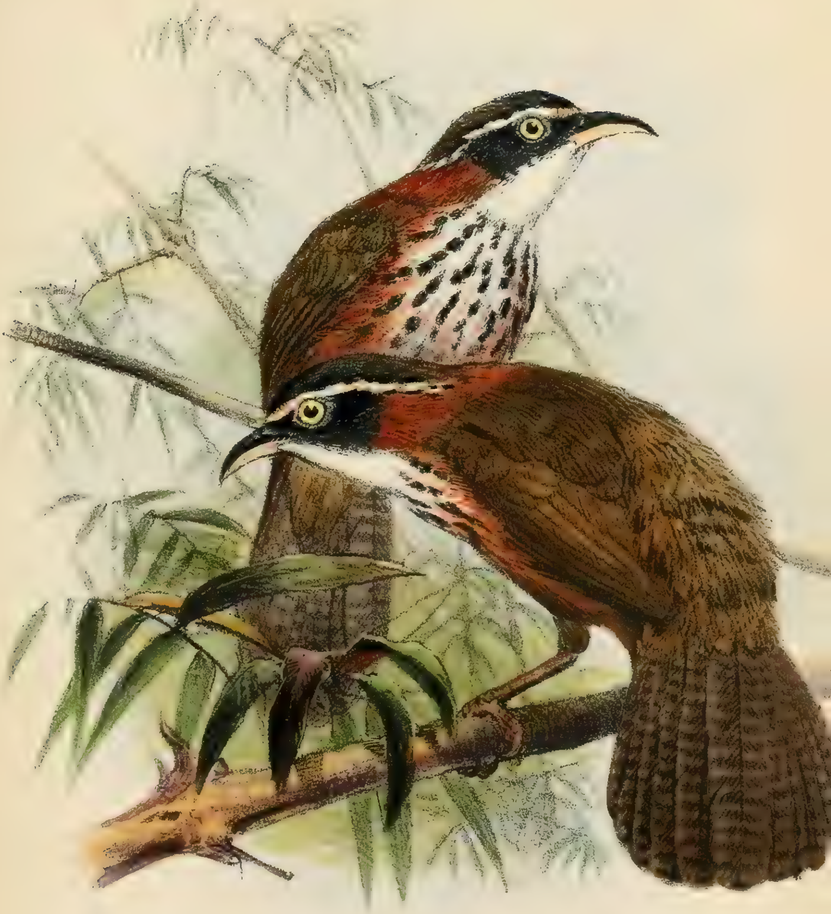
(Plate VI.)

[Continued from p. 219.]

13. Caprimulgus stictomus, Swinhoe: *Caprimulgus,* sp.?, Swinhoe, Ibis, 1860, p. 47, et 1861, p. 30.

This species has the naked tarse of *C. monticola,* Franklin (*gymnopus,* Hodgs.), and has like it also in the male the exterior lateral tail-feather white. I first made its acquaintance in a copse on the Changchow River, near Amoy, where I have found it several consecutive years at the end of September and beginning of October. It is at that season always moulting, and its

C.3 1882



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J.W. del et lith.

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POMATORHINUS MUSICUS.

prescribed time of stay is as nearly a month as possible. The small party that annually visit this wood appear to come from the interior to recruit their strength and recover their feathers, and then to pass southwards. In Hongkong and Macao I found the same species as a summer resident only. In Formosa it occurred as an abundant summer resident on the plains about Taiwanfoo; but both specimens I procured were females. Unfortunately, the only male I procured at Amoy was so shattered that I threw it away, and I have reserved no note of it; but I have adult females and immature birds from that locality, which in most respects agree with those procured in Formosa. The Formosan bird is, however, smaller, much paler, and less distinctly spotted, and may perhaps be ranked as a variety.

♀, procured at Apes' Hill, in November. Length $9\frac{1}{3}$ in.; wing $7\frac{8}{10}$; tail $4\frac{6}{10}$. Throat with two large white spots. A large spot of reddish white on each of the first three quills, occupying both webs in all except the first quill. Head spotted with black. A rufous collar extends from shoulder to shoulder. Wing-coverts and breast marked with large spots of clear rufous buff. Middle tail-feathers with nine bands of black. Tarse almost entirely naked, except at the tibial joint. Trachea $\frac{2}{10}$ in. broad, composed, near the lower larynx, of very thin close rings angulated downwards; the lower larynx not covered with muscle. The sterno-tracheal muscles, on giving off, become large and fleshy, and increase in bulk towards the coracoids. Heart $\frac{8}{10}$ in. long by $\frac{5\frac{1}{2}}{10}$. Liver, right lobe 1 in., left $\frac{9}{10}$. A mass of yellow fat covered the belly. Œsophagus hard, $\frac{2}{10}$ in. broad; proventriculus granulated, $\frac{6}{10}$ long, ovate, $\frac{4}{10}$ at greatest diameter. Stomach $1\frac{2}{10}$ in. long, 1 broad, $\frac{6}{10}$ deep, ovate, and compressed; its tendons large and its sides hard and muscular; epithelium thick and ochreous brown, broadly and deeply furrowed with longitudinal rugæ, well distended with remains of Coleoptera (chiefly *Cetoniæ*) and of nocturnal Lepidoptera. Ovary with numerous small eggs. Oviduct thin and black, $\frac{2}{10}$ in. wide and $1\frac{1}{2}$ long, leading into the cloaca, proving that the bird was a mature female. Cæca $1\frac{2}{10}$ in. from anus; right one $1\frac{1}{2}$ long, left one $1\frac{7}{10}$, both terminating in large black sacs, $\frac{3}{10}$ at widest part, their stems being $\frac{6}{10}$ long by $\frac{1}{12}$ thick. Intestine $9\frac{1}{2}$ in. long, varying in thickness from $\frac{1}{10}$ to $\frac{3}{10}$.

In the spring, at Tamsuy, N.W. Formosa, I witnessed the arrival of large numbers of *Caprimulgidæ*, which I took for this species. Like most of the Goatsucker group, they skulked about the roots of the bushes on the hill-sides during the day, and then required almost to be trodden upon before they would spring. When they rose, they dashed away with uncertain flight for a short distance and then fell, sometimes among bushes, but often on the bare ground, flapping and running awkwardly under the nearest cover of a stone or tuft of grass. On their first arrival, while the weather was still fresh, they frequented the banks of a hot sulphur-spring, where the steaming exhalations heightened the temperature and imparted to the atmosphere a disagreeable sulphurous odour. The birds, though in good condition, seemed to shrink from the cold, and sought the friendly warmth of the ravine, regardless of the deleterious smell, thus proving that they had sought these latitudes from a warmer climate.

I subjoin the description of another female, shot 10th October, 1861, at Taiwanfoo, which differed somewhat from the last in being paler and less distinctly spotted.

Length $9\frac{7}{10}$ in.; wing $7\frac{4}{10}$; tail $4\frac{3}{10}$, of ten feathers. Bill brownish flesh-coloured, largely tipped with blackish brown. Inside of mouth flesh-colour. Rim round the eye broad and smooth, clear ochre. Ear-conch large and triangular, with the vertex uppermost, the aperture exposed through a broad perpendicular slit. Tarsi naked; legs dark madder-brown, with whitish edges to scutes and whitish soles to feet; claws blackened, pecten whitish. Scapulars broadly edged with creamy burnt sienna. Wings closing to within $\frac{3}{10}$ in. of end of tail.

Heart $\frac{7}{10}$ by $\frac{5}{10}$ in. Yellow fat covering the belly. Liver very small, right lobe $\frac{8}{10}$, left $\frac{1}{2}$. Œsophagus thick and fleshy, $\frac{2}{10}$ in. wide; proventriculus $\frac{6}{10}$ by $\frac{4}{10}$. Stomach 1 in. by $\frac{7}{10}$, $\frac{6}{10}$ deep, of an irregular oval, with tendons little muscular; epithelium thick and leathery, ochreous, furrowed deeply in different directions, and containing remains of Coleoptera (chiefly *Cetoniæ*). Cæca $\frac{1}{2}$ in. from anus, right $1\frac{2}{10}$, left $\frac{9}{10}$, both bulging into black sacs, $\frac{2}{12}$ at broadest, and tapering at the ends. Intestine $7\frac{3}{10}$ in. long, varying from $\frac{1}{10}$ to $\frac{3}{10}$. Ovary with numerous small eggs.

The common summer species of China and Japan, *C. jotaka,* Schleg., allied to *C. europæus,* did not occur in Formosa.

14. Cypselus vittatus, Jard. & Selb. Ill. Orn. n. s. t. 39.

This species, which I have noted all along the coast of China, from Amoy to Talien Bay, was also seen in S.W. Formosa in summer, where, I suspect, a few nidificate, as is the case on many islands off the Chinese coast. It is everywhere in China only a summer visitant, arriving in early spring. Possessed of very long wings, and consequently of extensive powers of flight, it may be seen at all hours of the day soaring at a great height, apparently never resting till the shades of evening compel it to take refuge from the darkness. In damp foggy weather, however, it descends to nearer the earth, darting, with quick flight and screams, round hills and other prominences. Like all the species of Swifts I have observed, it copulates in the air, the female arresting herself and hovering while the male performs his offices. It builds in the holes of houses, often under eaves, and in many places in the crevices of rocks. The *Cypselus australis,* Gould (*Hirundo pacifica,* Lath.), is a closely related species from Australia; but I cannot think it the same, as ours migrates in summer in a south-westerly direction, and probably finds winter quarters, as is the case with many other species of birds, in the plains of Hindostan. It is true that Australia does render us one species of Swift, the *Chætura caudacuta* (Lath.) (*Hirundo ciris,* Pallas, Z. R. A. vol. i. p. 541), differing chiefly from its Himalayan ally, *C. nudipes,* Hodgs., in its white forehead; but its movements are by no means regular. The *Chætura* I never saw but once at Amoy, and that was after heavy, stormy weather, when a pair were seen, one afternoon, in company with numbers of the present species, and one of them was procured. The *C. caudacuta,* in its wanderings, seems sometimes to range into Amoorland, as noted by Von Schrenck, and thence even to England; but these instances must, I think, at present, until more facts are ascertained, be looked upon as certain vagaries that long-winged birds are guilty of, which "no fellow can understand," rather than as regular migrations ordained to occur year after year.

15. Cypselus subfurcatus, Blyth. *C. affinis*, mihi, 'Ibis,' 1860, p. 48, et 1861, p. 30.

This Swift is larger, much blacker, and with less furcate tail than its near ally, *C. affinis*, J. E. Gray, from continental India. Mr. Blyth has identified it as his Malayan species. It is locally distributed about South China, being generally resident in places where it occurs. It builds a nest under the eaves and rafters of houses much in the form of the House Martin (*Chelidon urbica*), but the exterior coating of it differs in being composed of thin layers of wool, hair, and dried grass, glued one above the other with the saliva of the bird, and lined internally with feathers. These nests serve the owners for a house all the winter through. In them they rear their young (only one brood in the year), in them they roost every night, and to them they frequently return during the day for rest after their long-sustained flights. The pairs keep together all the year, mingling however, in small parties, with others of the species from the same neighbourhood. These parties never seem to wander far, but seek their *Dipterous* food close to their homes, regulating the altitude of their flights according to the state of the atmosphere; and when a pair are anxious for rest, they leave the flock and fly down to their nests for repose, in which they remain twittering for half an hour at a time, and then dart out, pursuing and screaming after one another. In the spring they patch up the same nest, and use it as before till the close of the year. They seem to be very gentle birds, and greatly attached to one another. A pair built a nest under the beam of a verandah in my house at Amoy, and occupied the same for three years. I had thus ample opportunities of watching their habits. At Apes' Hill, Formosa, I met with this species again. Here it was nesting, not however under the roofs of houses, but in its primitive state under the ledges of rocks, building the same Martin-like nest. It was only in S.W. Formosa that I observed this bird; and I may here remark that I have never been able to trace it further north on the Chinese coast than Amoy, which is a trifle higher latitude than its position in Formosa.

16. Hirundo gutturalis, Scop.*

I use this name for our smaller Eastern form of *H. rustica*, because I believe it to be the oldest applicable: the true *H. javanica*, Sparrm., seu *panayana*, Gmel., from Java, is, as Prof. Schlegel has shown me, quite a distinct bird. Our species, ranging in summer from Canton to Peking, Mr. Blyth assures me is identical with specimens procured in winter in Calcutta; hence I infer that the birds that visit China in spring, and uniformly leave again in autumn, return to hibernate in the warm plains of India. The summer migrations of this species extend into Siberia and Amoorland on the one hand, as we learn from V. Schrenck, and to Japan, as far north as Hakodadi, as we learn from Capt. Blakiston's collection. In summer it also visits Formosa, but is chiefly confined in its distribution to the S.W. It is by no means so common there as the following species, with which it never seems to keep company during the period of nidification. In its habits, in nest, and colour of eggs, &c., this bird entirely agrees with the European *H. rustica*; yet in size it is always smaller, and in minor personal features different. I think it therefore necessary, for the sake of geographical distribution and the laws of migration, not to confound them with each other.

♂. Length 8 in.; wing $4\frac{7}{10}$; tail $4\frac{1}{2}$, lateral feathers exceeding the rest by 2 inches. Bill brownish black; inside of mouth dark ochre-yellow. Legs and claws deep purplish brown.

♀. Length $6\frac{9}{10}$ in.; wing $4\frac{5}{10}$; tail $3\frac{3}{10}$, lateral feathers $\frac{9}{10}$ longer. Claws and legs much lighter than in male. The pectoral band is browner, and the under parts brownish rufescent, instead of white as in the male. The axillaries are, however, darker.

17. Hirundo daürica, L.

H. alpestris, Pall.

Pallas, with his usual minuteness, has well described this bird and its nesting peculiarities. It is found in the extreme north of China as a summer resident only; but in the south, where the winter climate is more genial, it stays all the year, roaming about in small parties during the cool weather, and merely shifting its haunts from exposed to sheltered localities according to the severity of the season. In Southern China it is by no means so common as the Chimney-Swallow, and far more locally distributed; but in Formosa, both north and south, it abounds in almost every homestead. Being a resident bird, and not subject to distant migrations, we should naturally expect, according to recent theories, to find it subject to some variation through its insular position; and this we do observe in the larger form, longer wing, and almost entire absence of the red nuchal collar in our bird. The same facts are observed and indirectly admitted in the variety prevalent at Japan by a thorough anti-Darwinian—Professor Schlegel, who is so struck with the differences offered by the Japanese bird as to make of it a subspecies under the term *H. alpestris japonica.* The variations in the Formosan bird are, however, too trifling to found on them a new species; and were not the triple nomenclature held in such objection by the majority of modern naturalists, we could not do better than employ it in this instance. On taking possession of our native house at Tamsuy, I observed a nest of this Swallow under the rafters in the central hall. It was exteriorly built of specks of mud, like the nests of the Martin, but had a neck-like entrance, giving the whole the form of a French flask, flattened against the roof; the inside was lined amply with feathers. Pallas's figure gives a very good idea of its structure. The mouth, however, does not always point upwards, but is adapted in form and direction to the shape of the spot against which it is placed. At the close of March the pair to which the nest belonged returned, and in April began to repair the old nest. Towards the close of this month the female was sitting on three white, unspotted eggs. The male and female share the duties of incubation, the female usually taking the longest spell. For the sake of science, we let the birds have their own way, though they made a great mess about our small house, and nearly drove us wild with their loud, discordant twittering.

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* I fully agree with most modern naturalists in considering the Swallows as an extreme modification of the *Muscicapidæ*. It is now too late, however, in this paper, to place them in their proper position.—R. S.

In a ramble one spring morning, at dawn, I saw large numbers of these Swallows perching on some high bamboos. The sun was fast dispelling the thick night-fog that still hung low and heavy, and the birds seemed in high spirits at the return of fine weather. They fluttered from branch to branch, and as they regained a footing, rocked backwards and forwards before recovering their balance. It was in April, and they were all paired, the male being always distinguishable by his larger size and longer tail. In pairs they sang, or rather twittered, their notes *kee-wee-keé,* like sounds that might be produced by some metal instrument sadly out of tune. The male loudly sang his bar, and the female followed on a lower key. The male then fluttered his wings and began again; the female followed suit. In this manner the whole clump of tall, graceful bamboos looked alive with these birds, and resounded with their strange notes. Some pairs would start away and pursue one another, at first, with a smooth, skimming flight; then in an excited manner they would stagger along and, fluttering their wings, sing lustily their notes of love.

18. Cotyle sinensis (J. E. Gray): Ill. Ind. Zool. t. 35. fig. 3.
Hirundo brevicaudata, MacClell.

This small, grey-breasted, short-tailed species is a summer visitant to all suitable localities in the south of China, and is also found in all parts of Formosa, frequenting the steep sandy banks of rivers, into which it bores long galleries, constructing at the end of these its cup-shaped nest, and depositing therein three white eggs. Its winter migrations extend to the plains of Hindostan, where, curiously enough, it is reported by observers to nest again in the heart of winter (see Horsfield and Moore's List of Birds in the East Indian Museum, i. p. 96). This is, I believe, the only well-authenticated fact recorded of this long-suspected habit in migratory birds. It visits Formosa in April, and leaves again in October.

Length $4\frac{2}{10}$ in.; wing $3\frac{9}{10}$; tail $1\frac{9}{10}$, subfurcate. Upper parts greyish hair-brown; neck and breast much paler, dark on the sides of the breast. Wings and tail dark hair-brown; axillaries hair-brown. Belly and vent white. Bill, legs, and claws purplish brown; the feathered tuft in the joint between the tarsi and hind toe is wanting.

Some fifteen miles up the Tamsuy River, in a long sand-bank, I found several rows of perforations made by this bird. The birds were flying in and out of them in great numbers, so we stopped to examine them. Most of the holes were out of arm's reach; and as the bank was very steep, and composed of loose mud, we had great difficulty in establishing a footing. We managed, however, after much trouble, to insert our arms into several of them. The holes were in all stages of progress, some only just begun, others scarcely a foot deep; in some the eggs were hard-set, in others quite freshly laid. The holes ran into the bank with only a slight inclination from the horizontal. In all instances they turned a little to the right, extending in depth to about 2 feet,—their diameter being from 2 to 3 inches, which is enlarged to a cavity about 6 or 8 inches broad at the bottom. In its cup-shaped base was placed the nest, composed of light straw and dried grasses and lined with feathers. One nest, however, had no feathers; but as it had no eggs, I concluded it was unfinished. The eggs in every case were only three in number, of a pinkish white, without spot or stain. On our disturbing the birds they rushed in consternation from their nesting-site, and after flying about low in the air at some distance in great agitation, they would meet together for some seconds as if in consultation. They would then again hurry off in different directions, and again meet. Finding we were in no hurry to leave their ground, they began to scatter and soar away to a considerable height. As soon, however, as we withdrew for a space, they returned, many diving at once into their burrows, others rushing backwards and forwards close past the holes, as if bewildered and afraid to enter. They were so numerous, and looked so small in the bright quivering light of a hot Formosan day, that they seemed to me at times more like Dragon-flies than birds.

♂, shot Oct. 10, 1861. Heart $\frac{4}{10}$ in. by $\frac{2}{10}$. Liver, right lobe $\frac{6}{10}$ in., left $\frac{4}{10}$. Œsophagus $\frac{1}{10}$ in. wide; proventriculus $\frac{3}{10}$ in. by $\frac{2}{10}$. Gizzard rounded, with a small lower protrusion, flattened, with strong tendons, $\frac{1}{2}$ in. long by $\frac{4}{10}$, and $\frac{2}{10}$ deep; epithelium thin, with broad longitudinal furrows. Testes transparent and oval, $\frac{1}{10}$ in. long. Cæca, 1 inch from anus, $\frac{1}{10}$ in. long, and thin. Intestine $5\frac{1}{10}$ in. long, varying in thickness from $\frac{1}{10}$ to $\frac{2}{10}$.

I find, on closely inspecting the Sand-Martins procured near

Peking, that I was wrong in referring them to this species. I am now willing to admit that the Russian ornithologists were right in identifying them with *C. riparia* (Linn.). The immature state of my Peking specimen led to this mistake; but I have lately submitted my Formosan and Peking skins to Mr. G. R. Gray, and he confirms my present opinion.

19. Halcyon coromandelianus (Scop.).

Alcedo coromanda, Lath.

A specimen of this was brought to me from the interior, of which the upper parts were orange-ochre, washed with a beautiful tint of lilac-pink; rump with a central streak of bluish white. Under parts fine orange-buff, whitish on throat and belly. Bill and feet red-lead; claws orange-ochre, brownish on their sides.

Length 9 in.; wing 5; tail $2\frac{9}{10}$. Bill from rictus to tip $2\frac{8}{10}$ in.

This beautiful species, which, strange enough, I never met with in China, is recorded from India, the Tenasserim, Sumatra, Borneo, and Japan, everywhere varying in size, length of wing, brilliancy of lilac tints, and size of the azure marking on the rump. In my specimen this last is reduced to a simple central line; but this I have also observed in specimens from other parts. Of the small Sumatran and Bornean variety Bonaparte has made his species *H. lilacina* (the *H. coromanda minor*, Schleg.), length of wing 4 inches; of the Japanese variety (the *H. coromanda major*, Schleg.), *H. schlegeli*, length of wing $4\frac{1}{2}$. But in our Formosan variety, which in local position is intermediate to the two, the wing is 5 inches. Further, the extent of this limb varies considerably in a series of skins which I have examined from Hindostan.

This species appears to be resident in Formosa, inhabiting the lakes and rivers of the interior of the island, but is by no means common.

The Coromandel Halcyon would appear, then, in these eastern regions to confine itself entirely to the islands, it never having yet been observed on the main of China, where its place is supplied by *H. smyrnensis*, L., and *H. atricapillus*, Gmel., the easternmost range of these two last being bounded by the coast-line of China, and the northernmost in those parts, so far as yet observed, by the Yangtsze River.

20. Alcedo bengalensis, Gmel. Chinese, *To-he-ang* (Little Fisher).

The little "King of the Shrimps" is as common throughout Formosa as in China. I have a large number of examples from both countries, and they do not offer the slightest variation. It ranges on the main from Canton to the Amoor, and is also abundant in Japan, being everywhere a resident species. The preceding and this are the only two species of Kingfisher that I noted in Formosa.

♀, shot Sept. 3, 1861. Œsophagus $\frac{2}{10}$ in. thick; proventriculus $\frac{3}{10}$. Gizzard somewhat heart-shaped, $\frac{8}{10}$ in. long by $\frac{6}{10}$; the muscular tendons scarcely observable; epithelium very thin, wrinkled longitudinally, stained light yellowish brown, and containing fish-bones.

21. Tchitrea principalis (Temm.).

Muscipeta principalis, Temm. Faun. Jap. pl. 17 E.

M. atricaudata, Eyton.

M. atriceps, Blyth.

The only time I noted this bird was in April 1862, in Tamsuy, when I procured a female. In the plains of the south-west during the summer it did not occur; hence I am of opinion that it does not nidificate on our island, but is merely a straggler during the migration season. Its summer habitat, so far as I have yet ascertained, is Japan, whither it crosses by sea, together with *Xanthopygia narcissina*, Schleg., from the coast of Fokien; for in April it suddenly appears, the males mostly in complete plumage, with the central feathers fully acquired, at Canton, at Amoy, and at Foochow. It is at that season abundant for a few days, then suddenly disappears, not a single one remaining to breed; and we do not meet with it till we reach Japan. In making the sea-passage to Japan, some would naturally touch at the coast of N.W. Formosa. North of Foochow, as far as Peking, another species with a red tail, the *T. incii*, Gould, is supplied as a summer visitor. I would hence infer, by continuing the line of migration in a south-westerly direction, that the interior of Cochin

China and Cambodia constituted the winter-quarters of this species. A species with a black tail, *T. atricaudata,* which Mr. Blyth considers identical with our bird, has been procured in winter plumage in Malacca. In autumn for a few days again we are visited by this bird, but it is then in its winter plumage and shorn of its handsome tail-appendages.

Xanthopygia narcissina, Schleg., and *Hypothymis cyanomelæna,* Schleg., would also be naturally expected to touch at Formosa on their passage to Japan; but the latter of these may possibly cross the sea higher up the coast, as its summer migration extends right up to Peking. The former, however, is replaced in the north of China by a closely allied and more elegant white-eyebrowed species, the *X. leucophrys,* Blyth. I procured neither of these birds in Formosa.

22. MYIAGRA AZUREA (Bodd.).

Muscicapa cærulea, Gmel. *M. occipitalis,* Vigors.
M. cæruleocephala, Sykes (the female).

This is the common Flycatcher of Formosa, and is, I think, a resident species; for I observed it in numbers, as late as November, in the bamboo-groves of the south-west. It is more sparsely distributed in the hilly regions of North Formosa.

♂. Length $6\frac{4}{10}$ in.; wing 3; tail 3. ♀ of the same size, with rather shorter wings.

Male with upper parts and breast fine azure-blue, a patch of deep black on the occiput, and a deep-black band across the breast. Axillaries in part, and lower belly and vent, white. Wings and tail blackish brown, strongly washed with azure. Tail somewhat graduated, the tips of the feathers being pointed.

Female dingy azure on the crown, throat, and carpus, the breast and flanks being bluish grey. Upper parts brown, the tail only being washed with bluish grey on the outer webs of its feathers. Belly, axillaries, and vent white.

In fresh specimens of both sexes killed 6th August, 1861, the bill is light clear cobalt-blue, with black tip and edge. Legs and toes violet, with yellowish-grey soles. Inside of mouth greenish, yellower on the palate and tongue. Tongue concave, bulging at the sides, crenate at the tip and split, horny. Skin round the eye black; iris blackish brown. Ear small, oval, and exposed, placed behind the plane of the eye. Skin of cheek and ear blackish grey. Almost immediately after death, the blue of the bill fades away and changes to leaden, and thence to black. The same thing takes place, but not so speedily, in the colour of the legs. The bills of young birds, until the spring moult, are blackish brown. I have observed this same evanescent nature in the blue bills and feet of several other birds, as also in the blue tints of many flowers, especially those that spring from damp ground and contain a large amount of moisture.

I dissected a female, shot 30th August, 1861. Œsophagus contracts to about $\frac{1}{10}$ in., then expands gradually into the proventriculus. Gizzard nearly round, compressed laterally, diameter $\frac{1}{2}$ in., depth $\frac{3}{10}$; epithelium furrowed with a network of rugæ, of a deep flesh-brown tint, containing Dipterous insects. Intestine $5\frac{8}{10}$ in., unusually white, $\frac{2}{10}$ at thickest part. Cæca small and adnate, $\frac{8}{10}$ in. from anus, the right one placed higher than left; both less than $\frac{1}{12}$ in diameter.

About Taiwanfoo and Apes' Hill this species is specially abundant, frequenting the numerous plantations of tall graceful bamboos. Among the thickest and shadiest boughs of these trees it loves to sit, uttering its harsh grating note, and quarrelling with every other bird that comes within its reach. Its flights after insects are short, and usually merely a skip from one bough to another. It nidificates much in the manner of the common Flycatcher (*Muscicapa grisola*) at home, building a deep purse-like nest of spider's web and catkins in the forks of tree-branches, usually preferring a branch that leans against a tree or wall. The eggs, numbering from 4 to 5, and rarely to 7, are, when fresh, pinky white, spotted, especially at the larger end, with deep madder-pink spots and light pinkish grey. They vary somewhat in size, the largest egg measuring ·6 by ·48.

23. HEMICHELIDON LATIROSTRIS (Raffles).

Muscicapa cinereo-alba, Schleg. Faun. Japon.

Visits Formosa in summer, but not in any numbers.

24. HEMICHELIDON GRISEISTICTA, Swinhoe, 'Ibis,' 1861, p. 330.

This species, which I first discovered in Amoy, also ranges to Formosa as a summer visitant.

	Length.	Wing.	Tail.
Dimensions of two males shot in April . .	$5\frac{3}{10}$ in.	$3\frac{2}{10}$ in.	2 in.
Female, same date	5	$3\frac{1}{10}$	2

Bill blackish brown, just at base of gonys ochreous flesh-colour. Inside of mouth yellow, edge of rictus pale dusky yellow. Tongue flat, sagittate, broad, split at the end, and ciliated. Legs and toes black. Irides deep brown. A ring of white feathers encircles the eye. Upper parts, wings, and tail hair-brown, darker on the two last; greater coverts and tertiaries edged with brownish white. Under parts white, washed on the sides with light yellowish brown, the throat, breast, and flanks being streaked with long broad lines of deep greyish brown. In the female these spots are fewer and lighter.

25. Pericrocotus cinereus, Lafresn.

I witnessed a small flock of these only once, and that was at Taiwanfoo, S.W., on the 5th September, 1861. This species was originally described from the Philippines. In South China it is only seen and heard in the seasons of migration, roaming about the country with its undulating flight and canary-like chirp, and in a day or two it has disappeared. It passes its summer in the North of China, occurring even in Amoorland, and in early autumn turns down the coast to Amoy and Canton, whence it wings its way across the sea, touching the south of Formosa, to the Philippines for its winter-quarters.

In North Formosa I did not observe it, that being, I suppose, out of its direct route.

26. Pericrocotus griseigularis, Gould, P. Z. S. 1862, p. 282. Native name, *Hee-ah* (Little Gem).

♂. Upper parts dull bluish black; cheeks and throat smoke-grey, much deeper on the former. Rump and under parts brilliant flammeous, somewhat mixed with golden yellow on the latter. Centre of the belly snowy white. Wings and tail black, the former having the transverse speculum, and the latter the marks on the outer tail-feathers, bright flammeous.

♀. Beautiful golden yellow on the under parts, wing-speculum, and markings on tail, where the males are flammeous or crimson-orange. Back olive-green; rump yellowish olive-green. Head much lighter than in the male, and the throat greyish white, washed with yellow. Centre of belly snowy white. In the adult males the throat is quite grey; but in the majority of skins in my possession it is whitish, with an indication of yellowish. I have one male in the transition plumage, where the yellow-and-greenish garb of the female is brightening into the more highly tinted dress of the male. This gives us the plumage of the young bird, which is similar to the female, but more dully coloured, and at a younger stage probably mottled. In this transition state, this specimen teaches us that the yellow of the tail is the first to undergo a change, being here almost entirely red.

Bill and legs black; irides hazel. Tibial feathers in male black, ochreous on the inner side; in the female olive-grey, with yellow on the inner sides.

♂. Length 7 in.; wing $3\frac{1}{2}$; tail $3\frac{8}{10}$; tarsi $\frac{3}{4}$. ♀. Length $6\frac{1}{2}$ in.; wing $3\frac{4}{10}$; tail $3\frac{2}{10}$, of twelve feathers, the first three very short and much graduated, the rest nearly equal.

The nearest ally to this species is the *Pericrocotus solaris*, Blyth, from Nepaul and Bootan (figured in Gould's 'Birds of Asia,' i. t. 4). I have compared our bird with a skin of that species in my possession. The *P. solaris* is much browner on the upper parts than ours, and has the flammeous tints much less bright; but the chief distinctions are its bright orange throat and its orange thighs, which, from the above description, it will be seen are differently coloured in our species. The two species, however, run close, and, with numerous other birds as well as mammals, prove the affinity that the Formosan fauna bears to the Himalayan, rather than to that of the lower mountains of the Chinese coast.

In the hilly country of N.W. Formosa the *Hee-ah* is an abundant species, found all the year through. In the winter it associates in large flocks, many of these consisting almost entirely of males, and ranges about from wood to wood, and tree to tree, in the lower country. The females generally prefer remaining in the denser shelter of the mountain jungle, and do not evince such roving spirits as their lords; hence the small number of this sex that I was enabled to procure as compared with males. When on the wing, and in fact wherever they are, the *Pericrocoti* soon make their presence known by their peculiar trilling note, which has some resemblance to that of a Canary, but yet differs from that of any other bird I know. All the species that I have met with in a wild state have the same style of note, though disagreeing in many minor respects, and by practice can easily be distinguished. On a bright sunny day to witness a party of these birds fly across a wooded glen is a magnificent sight, the brilliancy of their tints contrasting well with the sombre hue of the surrounding foliage. But it is a still more beautiful sight to watch a group of these pretty creatures, male and female, examining an evergreen tree for insects. They frisk and flutter about the leaves, throwing themselves into all sorts of positions, and assuming the most difficult attitudes, as if delighting, in the ordinary business of feeding, to show to the greatest advantage those charms with which nature has so amply endowed them. In summer they retire into the depths of the highest forests, whither it was impossible for me to follow them.

27. GRAUCALUS REX-PINETI, n. sp.

♂. Length 11 in.; wing $7\frac{1}{2}$; tail 5.
♀. „ 11 in.; „ 7; „ 5.

This is another inhabitant of the interior forest-covered mountains, a pair of which were brought to me by my hunters. It is called by the Chinese the *Sam-ong*, or Pine King, and is noted for its loud unmusical notes. It comes but rarely from its wooded haunts to the cleared ranges in the hands of the colonists, and I have thus had no opportunity of watching its habits. I have never met with any species of this genus in China, and, from the limited areas inhabited by all the insular species that I am acquainted with, I should be disposed to decide on the Formosan representative being peculiar, though all the forms of the *Campephaga* group run so close in the immature plumage, that it is often difficult to determine them without a careful comparison of adults. In our case, however, the difficulty vanishes, as both the birds procured are adults, the one a male, the other a female.

The bill and feet of the male are black; soles light dingy, with ochreous tints. The bill and feet of the female are rather lighter. In the male, the lores, space round the eyes, cheeks, and chin are deep black; forehead and throat a lighter shade of the same. General plumage deep bluish grey, with a tinge of yellowish olive. Axillaries buff and white, somewhat mottled with grey. Centre of belly and vent white, the latter tinged with buff. Winglet, primary coverts, primaries, and rest of the quills black, the three first margined narrowly, the rest broadly, with the prevailing colour. The under wing whitish on the inner webs of quills; the fourth quill longest. Rectrices 12 in number, narrowest at their tips, the lateral feather being $\frac{6}{10}$ in. shorter than the rest. The two central rectrices blackish grey, with about an inch of black at the tip, margined with grey. The other rectrices vary in the amount of black, having at first a small white tip and narrow white margin, both these increasing in extent as you advance to the outermost feather, which is blackish to a greater proportion and more largely ornamented with white. My female differs from the male in having a rather longer and less deep bill, and in having no black on the region of the face. She has also the belly whitish instead of for the most part grey, and is there barred with light-grey striations. In other respects she is similar to the male, but is perhaps a little lighter. Both birds have many of the grey feathers throughout the general plumage with dark shafts.

The nearest ally to this species is the *Graucalus macei,* Lesson (*G. papuensis* auctorum, seu *G. nipalensis,* Hodgs.), which is larger, with larger bill, has much less black on the face, is of a lighter colour, and has no buff on the axillaries, besides differing in minor particulars of colouring and proportions. Our bird is a resident species, and is perhaps no more than a race of the *G. macei,* which is widely distributed throughout the tropical part of the continent of Asia, the rather slight variations being probably due to its isolated position. I may add that it has closer affinities with a Nepalese specimen from Mr. Gould's collection than with those from the Indian plains. For an account of the habits of *G. macei,* I must refer my readers to Horsfield and Moore's List, vol. i. p. 174.

28. DICRURUS MACROCERCUS, Lath.

Mr. Blyth has identified our Chinese Black Drongo with the

Indian bird that bears the above name. It is found throughout China, as far as the Amoor; but nowhere on the main did I observe it so specially common as at Formosa. Here, in all parts, both north and south, almost every bird you meet with is a Black Drongo, sometimes perched on the top of a tall bamboo, uttering its loud discordant metallic notes, at others skimming with long undulating flight across the country, chasing with quick turns an insect or small bird, or again seated demurely on the back of a lazy buffalo, waiting to snap the flies that swarm to torment his hide. In fact, you fancy yourself in the country of the Drongos. They may often be seen in large parties, though they never exactly flock together. A field may contain a dozen of them, perched on every available prominence; yet when they are alarmed, each individual thinks of himself alone, and rarely follows the direction of his companions. Some continue all the year through, but in March their numbers are greatly increased by fresh arrivals. They soon commence pursuing one another, and in April construct their nests in the shape of an oval cup, formed of fine twigs and grasses, and lined with finer dried grass and fibres. These they build on the waving branches of the bamboo, high up, so that it rests on the curving top, and sways with the tree to and fro to the lightest breeze. They are, however, firmly bound to their places; and I have often watched the female sitting quietly on the nest with only her long tail visible, while with each gust the tree-top nearly swept the ground. They lay from three to five eggs, white, with a few purplish-red specks, and usually have three broods in the year. During the season of incubation they become regular little tyrants, chasing all larger birds away from the locality. They seem at this time to have a particular aversion to Kites, Crows, and Magpies, all of which they pursue to a considerable distance, repeatedly striking at them with claws and bill, until the enemy is too far to be feared. Throughout the plains and lower hills of Formosa these birds abound, having a special partiality for bamboo-groves; but in China they are somewhat locally distributed. At Foochow, in the valley in particular, you find only a smaller grey species, but about the hilly ranges round this bird again occurs. The grey species is identical with *D. leucophæus* of Malacca; but, curiously enough, it seems almost entirely confined in China to the small 30 miles' area comprised by this valley, and there it is very common. It has also occurred at Amoy, but only as a very rare straggler.

Dissection of male shot 11th October, 1861. Heart $\frac{1}{2}$ in. long by $\frac{4}{10}$. Liver, right lobe $\frac{8}{10}$ in. long, left $\frac{6}{10}$. Trachea somewhat compressed at pharynx, which is covered on each side with strong muscles; the bronchi bulge at first, but narrow again shortly after, and continue of uniform size into the lungs. Œsophagus $\frac{3}{12}$ in. wide, very gradually widening towards the proventriculus, which is $\frac{4}{10}$ long by $\frac{3}{10}$ wide. Gizzard somewhat muscular, roundish, in diameter $\frac{9}{10}$ in., depth $\frac{1}{2}$; epithelium leathery, longitudinally furrowed, containing chiefly Coleoptera and Cimicidæ. Intestine $9\frac{4}{10}$ in., varying in thickness from $\frac{2}{10}$ to $\frac{4}{10}$; cæca, 1 inch from anus, $\frac{3}{10}$ long by $\frac{1}{10}$ wide, one placed a little higher than the other.

The young birds are brownish black on the upper parts, slightly washed with dark green. The wings and tail also brownish black, but more strongly washed with dark green, the feathers being obscurely edged with light brown. The under parts are blackish brown, a few of the feathers being faintly margined with a lighter colour. The edge of the wing and the axillaries are broadly striated with white. The moult comes on almost before the nestling has acquired full feathers, in the male the transition from the soft brown plumage of the young into the uniform glossy greenish black of the adult being at once accomplished; but in the female the white striæ and spots of the axillaries often continue for years. The feathers of the vent become almost white, and those of the breast and belly broadly margined with the same. The female does eventually assume the uniform colour of the male, but not entirely for the first three years of her existence. She can even then be always distinguished by her smaller size and her less-developed tail. The shape and proportions of the bill vary a good deal in my series of skins.

	Average length.	Wing.	Tail.
Male	11 inches.	6	$6\frac{2}{10}$
Female. . . .	$10\frac{1}{2}$,,	$5\frac{8}{10}$	$5\frac{1}{2}$

29. Chaptia brauniana, n. sp.

From the mountain forests of the interior country I procured several examples of a bird of this interesting genus of Drongos, which has hitherto comprised only two species, the *C. ænea*, Vieill., of Hindostan, and the *C. malayensis*, A. Hay, of Malacca. I may remark that no species has been yet recorded from China. Our bird is a constant denizen of the dense and lofty forests that clothe the central mountain-range of aboriginal Formosa, and make their heights almost impenetrable to aught but the stealthy savage. I never had the gratification of seeing the bird in its state of nature; but I was informed by my hunters that it is met with in small parties perched on the highest trees, whence it launches after the passing insect, much in the manner of other *Dicruridæ*, and that it possesses an agreeable song. The truth of their observation is entirely confirmed by Mr. Jerdon's remarks on the Indian species (see Moore and Horsfield's Catalogue, vol. i. p. 160).

The male and female of this species (which I have named after my assistant in the consulate, Mr. Braune) do not appear to differ.

Length 9 in.; wing $5\frac{1}{10}$; tail 5. Entire plumage black, somewhat smoky on the belly, and spotted with white on the axillaries. In some specimens these last are scarcely apparent. Upper parts, wings, tail, and carpal rim resplendent with deep metallic bluish green, showing purple in some lights. Bill and legs black. Irides blackish brown. In the young birds the whole plumage is black; but the first moult soon comes on, and developes the glossy feathers.

I have compared my Formosan with two fine specimens of *C. ænea* sent me by Mr. Atkinson from India. At first sight I pronounced them identical; but on closer examination, I think the distinguishing characters are quite sufficient to warrant their separation. They are both coloured much in the same manner, and both have white-spotted axillaries. But in all my skins, the bill, which varies *inter se* in size, is always shorter and much broader at the base than in *C. ænea*. It is also covered with feathers to a higher extent on the culmen. The feathers of the head and back are much shorter and rounder, and reflect purple and steel-blue instead of copper-green. The same colours prevail on the breast of our bird, where the feathers are, on the other hand, much larger, and round instead of lanceolate. The wings and tail are black on the under parts instead of brown, and the former is nearly ½ inch longer. The feathers of the tail are much broader, and the same purple and blue in all the glossy parts of our bird replace the copper-green of *C. ænea.*

30. LANIUS SCHACH (Gm.), var. FORMOSÆ.

L. chinensis, Gray.

The constant large size of the Chinese Shrike, in my opinion, justifies its separation from the small allied species of the Indian Archipelago, to which Gmelin's name is also applied; but as it was on a specimen brought from China by his disciple Osbeck that the great father of nomenclature founded the species, we cannot do otherwise than employ his name for our bird, leaving it to others to adopt some distinguishing designations for the smaller congeneric forms. I have traced our species from Canton to the banks of the Yangtsze on the main, and within this area it is everywhere a common resident species. It has never been recorded from North China, nor yet from Japan; but throughout Formosa it is quite as abundant as in China. It is noticeable for its loud, screaming note; but when quietly perched on the bough of some tree, I have heard it sing, its song being a strange mixture of harsh discordant notes with others soft and melodious. When in a playful mood, it can mimic with great success the wail of the Kite, or the bark of a dog, and the cries of many other animals. It loves to perch on prominent places. It preys on mice and small birds, but more frequently on grasshoppers, cockroaches, and dragon-flies. Its nest is usually placed in the centre of a bush, six or seven feet from the ground, formed of flexible twigs, and lined with hair or wool, fine grass, and fibres. The eggs vary from five to seven, and are yellowish grey, spotted with yellowish brown and light grey, chiefly at the larger end. I have often taken a nest of this bird in which all the eggs were of a clear pinkish-white ground-colour and spotted as usual; but I have never seen them girdled with a brown ring, as is the case with some of those of *L. collurio*, L.

In this large Butcher-bird we have an apparent confirmation of the modern theory of development. I have a large series of skins from Amoy, many of which show a strong tendency to lapse away into other closely affine species. Some have the frontal band reaching almost to the occiput, and lean towards *L. nigriceps*; others have the head nearly grey, and incline towards *L. caniceps*; others have the tertiaries broadly margined with buff-white, thus approaching *L. erythronotus*. Many of the smaller species seem to be descendants from, or, at least, of the same origin as, the Chinese type, and, though varying among themselves, always carry characters sufficient to distinguish them. These Indian and Malayan forms are mostly smaller; but in Formosa we have a bird of the same size and habits, and indeed singularly identical in every respect with the Chinese bird, except in a few of its hues. From my large series of Chinese skins I can produce one example or two undistinguishable from the Formosan variety, and from my Formosan skins I find an occasional specimen entirely like the Chinese bird, and yet, taken as series, they might by some be separated as of different species.

The Formosan variety is much whiter on the under parts, the tint that pervades it being rosier and less ochreous than in the Chinese. In the majority of specimens the lower flanks and vent only are chestnut. The crown of the head is of a uniform colour with the hind neck, and not whitish grey. The tertiary quills are broadly margined with whitish chestnut; and the inner web of the first tail-feathers is black, instead of pale brown mottled with black. In this last the Formosan birds show a constancy, whereas the Chinese specimens have all proportions of black and pale brown. But, like the Chinese, the Formosan birds also evince a wonderful tendency to vary, some having the frontal black much higher than others, others the tertiaries margined with white instead of chestnut; others, again, have the first quills pale reddish brown, with scarcely any white spot on the wing.

Average length of male 10 inches; wing 4½; tail 5½. The female is usually smaller, with rather shorter wings and tail.

This group of Shrikes, with its comparatively short wings and long tail, is not migratory, and would therefore seldom cross the eighty miles of sea that divides Formosa from China.

31. Lanius lucionensis, Linn.

This species of the red-tailed group of Shrikes, of which *L. phœnicurus*, L., is the type, is a summer visitor to Northern China, I having myself met with it as far north as Talien Bay. In spring and fall it abounds at Amoy for a few days, and then disappears, on its vernal migration into the interior and North of China; and in autumn across the sea to the Philippines, where it hibernates. In its line of migration it touches S.W. Formosa, and there we had its company for a few days in the early part of September. Its chattering note is very different from that of the preceding large species; and it is of more skulking habits, seldom showing itself in any conspicuous place. It possesses a melodious song of no mean capacity, but it is generally uttered in a subdued tone. It feeds on large insects, especially *Libellulæ*, but oftener, I think, on small birds, more particularly of the *Phylloscopus* group. The migration of *P. sylvicultrix*, nobis, unfortunately for that bird, takes the same route as that of this butcher, and consequently the latter always has his food at hand. The arrival of the one bird is slightly in advance of the other. My specimens from Formosa are identical with those procured from Amoy, whence I have an immense series of skins, varying in numerous instances, with strong tendencies in colouring to its congeners of the same group; but my remarks on them I must reserve for another paper which I have in preparation on the birds of China.

32. Cinclus pallasi, Temm.

I believe the Formosan Dipper to be the same as the Japanese bird, though I have not been able to compare skins. Our bird, when alive, has the bill and legs a dark leaden colour, the latter with a purplish tinge, the claws being whitish on the under parts. In dry skins, of course, these parts change colour, the bill becoming brown and the legs whitish; hence the Prince of Canino's mistake in giving as a character of this species, "rostro pallide fusco; pedibus albicantibus." I suspect that the bill and legs in most, if not all, the species of this genus are of the same perishable colours.

Length about $7\frac{3}{10}$ in.; wing usually about 4 in. (out of eight specimens the longest wing measures $4\frac{3}{10}$, the shortest $3\frac{6}{10}$); tail $2\frac{4}{10}$, of 12 feathers, nearly of equal length.

Adult: irides deep brown; general plumage sepia-brown, blacker on the head and under parts, and tinged with yellowish brown on the back and rump. The Japanese Dipper is said, in the 'Fauna Japonica,' to have the 2nd primary quill nearly equalling the 3rd, which is the longest of all. In all ours the 2nd is $\frac{2}{10}$ shorter than the 3rd, and the 3rd and 4th are equal in length, the 5th being a little shorter. If this is a sufficient character, perhaps ours is a distinct species, as by isolation it should ere this have become, it being a resident on the island, and not migratory. When I first discovered the bird, on my second visit to Formosa in 1857, I described it as probably new, under the term *Hydrobata marila*. It may be found, on comparison with the true *Cinclus pallasi*, Temm., to be distinct enough to require a name of its own.

This bird must nest early, for in April fully-moulted young of the year were already abroad. In this stage the irides are lighter, the inside and angle of mouth light yellow, the bill flesh-brown, and the legs purplish flesh-colour with a slaty wash. The upper parts are deeper brown than in the adults, being obscurely spotted on the back and rump with a lighter reddish brown; these spots are more distinct on the upper tail-coverts, which are entirely tinged with reddish; most of the feathers of the upper parts are margined with black. Feathers of the wings edged and tipped with light sepia and whitish, the ground-colour being much blacker than in adult wings. Throat whitish, finely striated with sepia. The rest of the under parts deep blackish sepia, the feathers on the breast and flanks being margined with light reddish brown, on the axillaries and belly with whitish. I have taken this description of the immature bird from two specimens in my collection, procured in N.W. Formosa in April.

This bird is usually met with on the mountains some 2000 or more feet above the sea, frequenting the sides of solitary cascades, which abound in the hilly parts. There, like the rest of its tribe, it feeds on freshwater insects, Crustacea, and Mollusca. I met with it on one of my rambles into the hills. It was perched on a large slab of rock that stood in a running stream. It kept throwing up its tail like a Wren, and, hopping to the edge of the stone, dashed into the water; in a few seconds it reappeared at the surface and regained the rock. Till then I was not quite sure what bird it was; there was no longer any mistake. My time was short, and I could watch no longer; so I secured my specimen and went my way. It was a likely place and season for its nest, but in my hurried search I could not detect it.

33. Petrocincla manilensis (Bodd.).

In Formosa you find this species as it is generally known, with blue upper plumage and breast and red belly. In all my numerous specimens the colours are always uniform. But in Amoy the red belly is by no means constant; I have several skins entirely blue, and others again with all proportions of red and blue. This, however, does not appear to be the case in the Formosan bird; so we will not here discuss the question of the validity of the species.

The female retains the mottled plumage through life; but the young male in the first autumnal moult shows a good deal of blue on the back and throat, and red on the lower parts: the plumage becomes more defined in the following spring; but the mottles do not entirely disappear till the close of the second year, and often not then.

	Length.	Wing.	Tail.
Male	$8\frac{1}{2}$ in.	$5\frac{2}{10}$ in.	$3\frac{4}{10}$ in.
Female	$8\frac{1}{2}$	$4\frac{8}{10}$	$3\frac{2}{10}$

Both sexes vary somewhat in size, as also in the length of the wing. My measurements are from full-sized examples.

This bird is partial to rocky hills near the sea. Its song is very sweet, and is often uttered on the wing. It builds its nest in the hollows and clefts of rocks and walls, adapting it to the shape of the chosen locality, and constructing it of fine flexible twigs, lined with fine grass, wool, and occasionally a few feathers. These are loosely put together, without much art. It lays from three to five pale greenish-blue eggs. In autumn, after the first moult, the young leave the hills and frequent the housetops of the town, about which they are constantly to be seen chasing one another, and singing their agreeable notes.

34. Oreocincla hancii, n. sp.

I have two Thrushes of this form, one shot at Amoy, and the other in North Formosa. They are both males, and both procured in March, when the adult plumage ought to have been acquired. They are of about the same size, and differ very triflingly, if at all, in their bills and legs. The Chinese bird has a white throat, and is marked with rich olive and ochre; the Formosan has a spotted throat, and has scarcely any of the rich ochreous tinge. Birds of the same species often vary in colour; and these differences, therefore, are hardly worth noticing, except in connexion with the measurements of the wings and tail. The Formosan has the 2nd quill nearly half shorter than the 3rd, whereas the Chinese has it not quite $\frac{3}{10}$ shorter, and the whole wing of the former is $\frac{6}{10}$ longer than that of the latter. The tail, too, of the former is longer and somewhat more graduated. All these, however, may be only individual peculiarities. In the true Thrushes, size and proportions are very various, and probably also in the *Oreocinclæ.* And as to variety in colour, we need not go to the allied *Turdi*; compare only the young *Oreocincla* with the adult bird. I have, nevertheless, thought it right to consider the Formosan provisionally as a distinct species. The Chinese bird I believe to be the true *O. aurea* (*Turdus whitei*).

Length $11\frac{1}{2}$ in.; wing $6\frac{8}{10}$; tail $4\frac{1}{2}$, of 14 feathers. Upper mandible and apical third of lower blackish brown, the rest of lower and edge of upper being light brownish flesh-yellow. Legs light flesh-ochre, deeper and browner on the toes. Claws brown, with pale edges. This specimen was brought to me on the 20th March, by my hunters, from the mountain forests of the interior. I never met with it alive in Formosa. The Chinese bird I have only seen twice, both times in our garden at Amoy, which they visited two years running, for the sake of the banyan-figs, which were then ripe. The only note I heard them utter was a long-drawn "*seep,*" like that of our other Thrushes *.

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* I have named the Formosan *Oreocincla* after my friend Dr. Hance, Her Majesty's Vice-Consul at Whampoa, so justly celebrated for his researches in Chinese Botany.—R. S.

35. Turdus chrysolaus, Temm. Pl. Col. 537, and Faun. Japon.

This is the only Thrush we procured in mature plumage. In spring, from February to April, I observed large numbers of this and the following several species about the neighbourhood; but, from their being in parties and soon again disappearing, I think they only touched our coast on their northward migration. This species was, however, occasionally seen in pairs, and frequently procured in full plumage; and, from this, I fancy it may stay with us to breed, though I have no actual proof of the fact.

36. Turdus pallidus, Gm.

T. daulias, Temm. Pl. Col. 515, and Faun. Japon.

Numbers observed and procured at Tamsuy, but not one mature bird.

One of this species paid frequent visits, in January 1862, to our garden at Tamsuy, and I had then opportunities of closely watching its habits. He used to hop about over the weeds with a stately movement. He stands upright, and turning his head on one side with a knowing look, as if something caught his eye, makes a bob forward and grapples the head of a worm, which he extricates from its hole by repeated hops backwards. The worm is in his bill. He stops for a second as if to take breath, then hammers it against the ground, shaking it at times like a terrier shakes a rat—then gulp, and the worm disappears. But its size was large, and its moribund wriggling down the œsophagus seems to produce a little inconvenience to its destroyer, for he ruffles his feathers and appears discomposed. It is only for a second; he stoops his head and runs forward, with hurried step, under an archway of tangled grass, and emerging further on, continues his inspection of the rain-moistened mould, chuckling to himself in a half-subdued tone, as if rejoicing at his luck in having selected such a well-stocked beat. He stops and raises his head, he hears a noise. The intruder alarms him, and with a louder chuckle, preceded by a long sibilant *"see,"* he wings into an adjoining tree, opening his tail in flight sufficient to display the white spots that ornament its lateral feathers. In his retreat he keeps on muttering a chuckle at intervals. At last his impatience gets the better of him; with a loud cry, resembling the syllables "*quack, quack,*" he flies right away.

37. Turdus obscurus, Gm.
T. pallidus, Temm.
T. pallens, Pall.
One female procured at Tamsuy in spring.

38. Turdus fuscatus, Pall.

Immature birds common at Tamsuy in spring. Several procured, but none in complete plumage.

39. Turdus naumanni, Temm.

A female straggler shot, 19th February, at Tamsuy, in immature feathers.

Length 10 in.; wing $6\frac{1}{10}$; tail $3\frac{6}{10}$. Bill black, except gape, basal edge of upper and basal half of lower mandibles, which are gamboge-ochre. Rim round the eye light brown; iris deep brown. Ear-covert large, pale yellowish ochre; operculum oval, and placed near the upper arc. Legs and claws pale dingy brown, with scarce a tinge of yellow. Proventriculus $\frac{7}{10}$ in. long by $\frac{3}{10}$, contracting before the gizzard, which is $\frac{7}{10}$ long, $\frac{6}{10}$ broad, and $\frac{4}{10}$ deep, with moderately muscular tendons; epithelium thick, leathery, and yellowish, longitudinally furrowed with broad rugæ. Intestine $11\frac{3}{4}$ in. long, thick and fleshy, with plenty of fat, which especially abounds over the belly; cæca $\frac{3}{4}$ from anus, $\frac{3}{10}$ long.

I observed no Blackbird in Formosa.

40. Myiophonus insularis, Gould, P. Z. S. 1862, p. 180.

The genus *Myiophonus* has been split up into two subgenera, *Myiophonus* and *Arrenga,* the former comprising the species with lanceolate feathers, spotted as with dried gum, and having white spots on the wing-coverts, and the latter those with rounded feathers and bright-blue wing-coverts. The former section at present contains three closely allied species representing each other in their respective localities, viz.:—

1. *M. temminckii,* Vigors (Gould's 'Century,' pl. 21), with moderate, yellow bill. *Hab.* Himalayan range, as far as the Tenasserim provinces.

2. *M. flavirostris* (Horsf.), (*Turdus flavirostris,* Horsf. Trans. Linn. Soc. xiii. p. 149 : *M. metallicus,* Temm. Pl. Col. 170), with a very large yellow bill. *Hab.* Java.

3. *M. cæruleus* (Scop.), (Sclater, 'Ibis,' 1860, p. 55), with small *black* bill. *Hab.* Hills of Southern China.

The subgenus *Arrenga* has hitherto comprised only the two following forms :—

1. *M. cyaneus* (Horsf.).
Turdus cyaneus, Horsf. Trans. Linn. Soc. xiii. p. 149.
Pitta glaucina, Temm. Pl. Col. 194.

A small species from Java, purplish on the upper parts and blackish brown on the lower.

2. *M. horsfieldii,* Vigors (Gould's 'Century,' pl. 20).

A larger species, dark, with very bright-blue shoulder-mark and frontal band, from the Nilgiri Hills, India.

To this last group our bird belongs, and to the last species in particular it is closely affine.

Note on a specimen shot at Tamsuy, 27th March, 1861.—Length $13\frac{2}{10}$ in. ; wing $6\frac{1}{2}$; tarsi $2\frac{1}{8}$; tail $5\frac{2}{10}$, of 12 feathers, somewhat graduated, giving a rounded form to the tail when expanded ; rectrices broad and rounded, each feather pointed at the shaft, which projects $\frac{1}{10}$ in. beyond the web (this is so in all the specimens, and I think is partly due to the abrasion of the web). Bill, legs, and claws black. Tongue horny, concave, rounded at the tip, which is split into two sets of cilia ; inside of bill and tongue blackish olive, paling into light dingy olive-yellow flesh-colour as it descends to the glottis. Iris deep brown. Ear very small, round, and white, the aperture being round and central. Plumage purplish black. Lore and band over bill deep black ; above this an obscure band of purplish blue. Feathers of breast and belly broadly margined with ultramarine or purplish blue ; small wing-coverts near the shoulder margined with a bright tint of the same. Wings and tail black, washed with purple, chiefly on the outer webs of the feathers. Feathers of the flanks and belly having the greater part of their basal webs white ; those of the remaining feathers of the body pale black. The female is similar to the male, but rather smaller.

M. horsfieldii is at once distinguishable from the Formosan bird by its very bright blue frontal band, by its brighter blue shoulder-mark, by its head and upper back being quite black, by its having no white on the basal part of any of the feathers, by its wing being $\frac{1}{2}$ inch shorter and rounder, and by its tarse being about $\frac{3}{10}$ shorter. The basal whiteness of the ventral and flank feathers occurs in the small Javan species, *M. cyaneus,* as also in the three typical *Myiophoni.*

The Formosan Cavern-bird haunts the dark wooded ravines in the interior mountains, seldom descending below the level of 2000 feet. Like the Chinese species, its favourite position is on a large boulder of rock on the side of some torrent, whereon it stands, expanding and shutting its tail like a fan, and occasionally throwing it slightly up. It is easily startled, running, rather than hopping, over the surface of the rock, and flying off with a loud screaming note. It possesses a short, somewhat pleasant song. In its manners and habits it seems to connect the Thrushes and *Petrocinclæ* with the *Pittæ,* which also love the neighbourhood of mountain streams. The shape of its ear is most peculiar, and almost exactly similar to that of the *Henicuri,* which are also cascade-loving birds. The birds dissected contained usually remains of Coleoptera and their larvæ.

41. GARRULAX TAIVANUS.

Garrulax taiwanus, Swinhoe, Journal of As. Soc. of Shanghai, No. 2. p. 228.

The *Hwa-mei* (Flowered-Eyebrow) or Song-Thrush of the Chinese is so universally met with as a cage-bird in China, that every European possessed of ordinary observation that has visited the Celestial realm must be acquainted with it; yet sad confusion exists in its nomenclature. There is a species from Tenasserim with a white cheek, which has frequently been mistaken for our bird. An Indian *Malacocercus* has also been confounded with the Chinaman,—for a genuine Chinaman I take him to be, confined in distribution to the hilly country of Southern China. We have not to run far for a name for the

Chinese bird; only look to Linnæus's 'Systema Naturæ,' where, under the head of *Turdus sinensis,* the description shortly and admirably applies to this bird. It runs thus:—"T. rufescens, capite fusco striato, superciliis albis, rectricibus fuscis strigis obscurioribus, pedibus flavis.—*Turdus sinensis,* Briss. Av. ii. p. 221; Hoamy de la Chine, Buff. Hist. Nat. des Ois. iii. p. 316."

Osbeck, who visited Canton, could have made scarcely any collection without including the bird best known to all Chinamen.

In China the *Hwa-mei* is a true hill-bird, and never met with on the plains or low country, where its place is supplied by the large *Garrulax perspicillatus,* L. I have traced it from Canton to Foochow; and I suspect it may extend to Ningpo, but certainly not further north.

The Formosan *Hwa-mei* (or *Hoe-be,* as the word is there pronounced) is both a hill-bird and a frequenter of the plains. In the hills, however, it is not common; and I do not think it there ranges to a greater altitude than 2000 feet. On the plains it is everywhere excessively common, being found in the bamboo-plantations, hopping, with curved back and rounded tail, from bough to bough, fluttering its short distances from tree to tree or bush to bush, and frequently singing out lustily its loud notes. Its song is rich and powerful, abounding in a great variety of notes, many of which have a strong resemblance to those of the Blackbird and Thrush (*T. merula* and *T. musicus*); but, unless heard at a moderate distance, the noise almost deafens you. I think the notes of the Formosan bird rather finer than those of the Chinese; but in this the Chinese settlers, naturally preferring the products of the mother country, do not agree with me. The *Hoe-be* is not particular in the choice of its nesting-site; it sometimes builds in a bush close to the ground, often at various heights, and at others on the bough of a tree. The nest is small and compact, rather flattened, cup-shaped, and formed of coarse grasses and fibres exteriorly, lined with fine dried grass. The eggs vary from three to five, and are of a rather deep greenish-blue colour, without spot or stain. They vary a little in size, averaging in length ·91, in breadth ·72.

Note on a fresh specimen shot at Taiwanfoo, 8th Aug. 1861.—

Length $9\frac{1}{2}$ in.; wing $3\frac{6}{10}$; tail $4\frac{4}{10}$, of twelve graduated feathers, the outermost being 1 inch shorter than the central. Wing rounded, the 5th, 6th, and 7th quills being nearly equal and the longest in the wing. Bill wax-yellow, brownish on the culmen and tip; inside of mouth yellow. Iris light greenish grey. Skin round the eye and ear purplish violet. Ear large and oval, aperture exposed. Legs yellowish flesh-colour washed with brown; claws brownish. Crown, back, sides of breast, and flanks greyish olive; ochreous white on the forehead, the crown and upper back being streaked broadly with blackish brown. Rump and wings olive-brown, greener on the former; the latter being hair-brown on the inner webs, with dark shafts. Tail brown, barred with a deeper shade and margined with olive. Throat, loral region, and breast ochreous, faintly streaked with deep brown. Centre of belly smoke-grey. Under wings rust-coloured ochre; vent and tibial feathers brownish ochre.

The Chinese *Hwa-mei* is of the same size and proportions, with the same form of wings and tail; but it is much ruddier, has rather a longer bill, only faint indications of stripes on the crown and hind neck, and a fine clear white mark round and past the eye, like a spectacle. I have a very large series of the Formosan species from several localities in Formosa, and in all, the characteristic markings are constant: but one or two specimens have an indication of the white eyebrow, a few of the feathers being quite white; in one nestling in particular the white eyebrow is distinctly marked. The distance between China and Formosa is too great for the slightest probability of either species of these short-flighted birds crossing over to the opposite coast; we must, therefore, look to some other cause for the striking resemblance between the two forms.

The nestling is very similar to the adult bird, but is of a deeper colour, has scarcely any indications of the thin stripes on the throat and breast, and no smoke-grey on the belly. Its iris is of a rich brown colour.

The female is scarcely distinguishable from the male, except by her rather smaller size and shorter tail.

The range of this species in Formosa appears to extend throughout the entire champaign country and lower hills. I have seen and procured it from Sawo, on the eastern coast; Kelung, north; Tamsuy, N.W.; Taiwanfoo and Apes' Hill, S.W. It feeds on almost every creeping thing of the great insect-family, and occasionally on birds of the *Prinia* group. I have frequently taken entire birds'-eggs out of its stomach. It searches throughout the bushes more diligently than any schoolboy for the nests of small birds, and ruthlessly sucks the eggs and devours the young. In this character, as well as in some others, it approaches the Jays; but I think its affinities are more decidedly *Turdine.*

42. GARRULAX RUFICEPS, Gould, P. Z. S. 1862, p. 281.

This species frequents the central wooded range of mountains, and very rarely descends to the lower hills that flank the Chinese territory. I never met with it alive, and my hunters only succeeded in procuring one pair. It differs entirely from any of the Eastern-Asiatic forms of *Garrulax,* but, strange enough, has characters largely in common with a species from Bootan and Mussoorie (India), the *G. albogularis,* Gould.

Length $10\frac{1}{2}$ in.; wing 5; tail 5. Bill black. Loral space round eye and chin black. Crown of head bright rufous; cheek light-rufous olive; upper parts brownish olive. Wings hair-brown, broadly margined with olive, the tertiaries being almost entirely of that colour. The 6th quill-feather the longest in the wing; the 5th and 7th being equal, and slightly shorter than the 6th. Tail rich olive-brown, greyer on the two central feathers, which are unspotted; the next one has a whitish mark at the tip; the 3rd a broad white mark, which increases in size, until, on the lateral feathers, it is $1\frac{4}{10}$ in. deep. Tail graduated, the outer feather being $1\frac{1}{10}$ in. shorter than the central ones. Throat and lower neck pure white; the centre of the belly not quite such pure white. Sides of the breast of the same colour as the back. Flanks, axillaries, and tibiæ brownish ochre or buff; vent pale buff. Under part of shafts of quills and tail-feathers whitish, and under edges of inner quills rufescent. In the pair I have, there is scarce any difference as to size or colour. Tarsi 1·85 in. long.

In *G. albogularis* the entire belly and flanks are of a decided reddish ochre, and the crown of the head is of a uniform colour with the back. In other respects it has a strong resemblance to our bird.

43. Garrulax pœcilorhynchus, Gould, P. Z. S. 1862, p. 281.

This is a commoner bird than the last in the forest-ranges near Tamsuy, but, like it, never descends to the lower unsheltered hills. It is a noisy, chattering species, assembling several together in the underwood, and keeping up an incessant jabbering, with frequent loud, discordant cries interspersed. It is sly and vigilant, and tries to elude observation, generally escaping from the opposite side of the bush it is in, with short flights to the next, and so retreating from approach. In the *Cinclosoma cæruleatum,* Hodgs. As. Res. xix. p. 147, from Nepal, we have a close representative of this species, with similar brown upper plumage and scaly head; but that species is easily distinguished from ours by the white on its under parts.

Length $10\frac{1}{2}$ in.; wing 5; tail $5\frac{2}{10}$; tarsi $1\frac{1}{2}$. Wing having the 6th feather rather the longest, the 7th slightly shorter, and the 5th rather shorter again. Bill: not quite the entire apical half bright ochre-yellow with a greenish tinge; basal portion greyish black. Legs brownish grey, with light-brownish soles and brown nails. Sexes alike. General plumage a bright reddish brown, redder on the head, tertiary edges, and tail. There are some black bristles about the bill, and the ear is covered by coarse, bristly, black feathers. The feathers of the head are narrowly margined with black; the primary and secondary quills deep brown on the inner webs and shafts, their margins, especially those of the former, being paler than the general colour. Tail obscurely barred with a shade of brown, more distinctly when the feathers are new, but the bars almost entirely fading away with wear; the two outer feathers terminating with pale, almost whitish spots; outermost feather $1\frac{2}{10}$ in. shorter than central. Belly and flanks deep smoke-grey, brownish on the tibiæ; vent buff-white. Under wings brown; under shafts of wings and tail whitish.

44. Pomatorhinus musicus, Swinhoe, Journ. As. Soc. of Shanghai, vol. ii. p. 228. (Plate VI.)

In 1857, in my voyage round Formosa in H. M. S. 'Inflexible,' I first came across this species, and described it under the above name at a meeting of the North China Branch of the Asiatic Society at Shanghai. It is a very abundant species throughout all the flat country and lower hills of Formosa. In every grove and plantation you are sure to find some of this species in small parties or in pairs, and frequently in company with the common *Garrulax taivanus.* They have also much the habits of that group, collecting in a bush and chattering loudly together, or hopping from bough to bough, with rounded back and rounded, partially expanded tail. They have also the same affectionate manners towards one another, sidling together on a bough, and rubbing and pecking one another coaxingly. Like *G. taivanus,* they breed twice, and sometimes thrice, during the summer, building in the same sort of places and of similar materials, but making larger nests of a rounded form. Their eggs are of a somewhat glossy *white,* and are generally three in number; they measure ·9 by ·62. Their food consists of Coleopterous and other insects; but they have a great partiality for the large *Cicadæ* and their larvæ, thus rendering a great service by thinning the numbers of these noisy pests. I have never found remains of birds in their stomach; and indeed, judging from their bills, I do not well see how they could destroy birds. Like others of the *Garrulax* group, if their food is too large, they hold it down under their claws while they peck it to pieces with their bill. Some species of *Garrulax,* I am told, attach their prey to thorns, like the *Laniidæ,* but this I have never observed. This bird occasionally throws its tail from side to side, but never at right angles like some of the smaller Australian *Pomatorhini* and the little *P. stridulus* of Foochow.

There is not much music in its ordinary call-note; but when two or three are met together, and vie with one another in their strains, the effect is pleasing, though their melody is not to be compared to that of the *Hwa-mei.* When at rest in the middle of the day, hidden in some sombre hill-side wood, they keep on uttering at intervals a series of very liquid notes in regular cadence. These have an indescribably hollow and unnatural sound, and at first puzzle the listener to know whether they are produced by beast, bird, or insect.

The nearest Indian ally of this species is the *P. ruficollis*, Hodgs., from Nepal. This is, however, a much smaller species, and more nearly affine to my *P. stridulus* of the Southern Chinese hills. I give the measurements from three freshly-killed individuals; the first a male, shot 8th August, 1861, at Taiwan-foo, and the two following females, shot 10th February, 1862, at Tamsuy:—

♂.	Length $8\frac{2}{10}$ in.;	wing $3\frac{2}{10}$ in.;	tail $3\frac{4}{10}$ in.;	tarse $1\frac{3}{10}$ in.
♀.	„ $8\frac{2}{10}$;	„ 3;	„ $3\frac{1}{2}$;	
♀.	„ $8\frac{1}{2}$;	„ $3\frac{2}{10}$;	„ $3\frac{1}{2}$;	

From these it will be seen that the size varies somewhat in individuals; but from my large series I do not learn that there is any special sexual difference of size, nor even of colour.

Upper mandible brownish black; under and apical edge of half upper flesh-white, with wash of lemon. Inside of mouth pale lemon flesh-colour. Tongue horny, except centre towards base, which is fleshy, sagittate, bulging a little on the sides about the middle, concave, following the curve of the bill; top ciliated, with a round brush. Ear horizontally oval, aperture occupying lower two-thirds. Edge round iris black; iris straw-yellow. Legs dusky leaden grey, whitish on edges of scales; claws and toes dingy ochreous grey.

Throat and eyebrow white. A black line runs from the bill past the eye, over the ear-coverts. Crown deep olive-grey, the feathers being marked centrally with black, those on the forehead having white markings, and those over the eye-streak being almost entirely black. A bright rufous band runs from one side of the breast over the back to the other. Upper parts olive-brown, tinged with rufous. The 5th quill longest in the wing, the 6th slightly shorter; quills hair-brown, margined with light olive, the tertiaries more margined and washed with the colour of the upper parts. Tail graduated, the feathers rounded at the tip, the lateral feather being $\frac{8}{10}$ in. shorter than the central; the whole hair-brown, obscurely barred with a deeper shade, margined, especially near the base, and washed with olive. Under wing-coverts, flanks, and sides of belly rich rufous, more or less tinged with olive. The central quills of the wing on the under side pinkish ochre. Breast and centre of belly white, the former being largely spotted with black. These spots in some specimens are very scanty, in others rufous or rufescent, and in others consist of mere streaks. In most specimens the belly is spotted with large rufous spots; and in many the rufous on the flanks is largely encroached upon by the white of the belly. The tibiæ and vent in all are of the colour of the back.

The young bird is rather browner, but in other respects similar to the adult.

I have specimens of this bird from Taiwanfoo, Apes' Hill, Tamsuy, Kelung, and Sawo, and they are all of identical form and colouring.

45. POMATORHINUS ERYTHROCNEMIS, Gould, P. Z. S. 1862, p. 281.

This species replaces in the central mountain forests the preceding species of the lower country. It rarely, if ever, descends to the ranges below an altitude of 2000 feet, and certainly never leaves the gloom of the virgin forest for the partially wooded level of the plains. It enters upon its nidificatory duties much earlier than its congener, for in April I procured a couple of full-fledged young birds. I have never taken its nest, but had the good fortune to procure an egg which a female dropped as it fell wounded to the ground. This egg is white, and quite in character with those I possess of the other species, but larger, measuring 1·2 in. by ·81. From its inaccessible haunts, I have not had many opportunities of watching the habits of this bird; but, as far as I can gather, they a good deal resemble those of its ally. Its notes are, however, harsher and less musical. Both the species are entirely insectivorous, having no partiality, so far as I could ascertain, for fruit or berries.

Length $9\frac{1}{2}$ in.; wing $3\frac{8}{10}$; tail 4. These measurements are from dried skins. Bill along culmen 1·3 in.; from angle $1\frac{1}{2}$; tarsi 1·47.

Bill much curved, blackish grey, with pale edges. Legs leaden grey; claws brownish. Iris light reddish brown. Feathers near nostrils, spot on cheek, greater part of tibiæ, vent, and edges to some of the breast-feathers bright rufous. Crown and moustache dull black, the feathers of the former edged with deep olive-grey. Sides of the neck, flanks, axillaries, and basal portions of tibiæ olive-grey, somewhat rufescent. Back and wing-coverts rufous brown. Quills and tail deep hair-brown, deeply margined and washed with rufous brown; the 4th, 5th, and 6th primaries nearly equal, and longest in wing; under part of central quills whitish. Rectrices oval at end, graduated, the lateral feathers being $1\frac{2}{10}$ in. shorter than the central. Throat, breast, and belly white, the breast being adorned with a few very large black oblong spots.

In the young bird the bill is much shorter and less curved, the head is browner, and the back and upper parts more rufous; but the under parts are dingier, and the colours generally not so bright as in the adult.

46. HYPSIPETES NIGERRIMUS, Gould, P. Z. S. 1862, p. 282.

General plumage black, shot with dark green, especially on the upper parts, the wings and tail being edged with bluish or charcoal smoke-grey. Upper mandible of bill somewhat serrated on the apical half. Sexes similar, the female having rather shorter wings. Bill and legs brilliant coral-red; sole-pads and bases of claws dingy ochreous; claws black. Inside of mouth and tongue orange-red. Tongue horny, and turned up at the edges, which in the apical third are split up and overlap one another. Skin of eyelid black; iris deep chestnut. Ear-covert roundish, not quite so large as eye, with a large quadrilateral central aperture. Length $9\frac{8}{10}$ in.; wing $4\frac{8}{10}$; tail $4\frac{1}{10}$. A large banyan-fig was found sticking in the throat of this specimen.

The first quill rather short; the 4th the longest in the wing, being $\frac{1}{12}$ in. longer than the 5th. Tail of 12 feathers, their shafts slightly projecting; the four central feathers about $\frac{2}{10}$ in. shorter than the others, giving to the tail a somewhat forked appearance; lateral feathers curved outwardly. In many of the specimens the feathers of the belly, axillaries, rump, and vent are margined with bluish grey.

In the young birds the plumage is much browner, and the feathers of the under parts margined and tipped with greyish white. All my specimens were procured in the spring of 1862, but many of them still retain markings of the immature plumage, thereby showing that the autumnal moult is not a complete transformation of the young into the mature plumage. In the adult the wings are brownish black, the quills, especially the secondaries, being broadly margined with bluish grey; the wing-coverts are also black, but less distinctly margined. The tail is brownish black, all the feathers, except the outermost, being margined exteriorly for the greater part of their length with bluish grey. The feathers of the crown are long and lanceolate.

The nearest allies of this species are the *H. psaroides*, Vigors, from Nepal, and the *H. ganeesa*, Sykes, from Assam, both of which are of blackish-grey plumage, and both have, like it, red bills and legs. I know no similar species from China. The only bird of this genus that I have seen from the hills of Southern China is a green species—my *H. holtii*—very closely allied to *H. maclellandi*, Horsf., from Bootan and Nepal. The Formosan bird is at once distinguishable from its Nepalese cousins by its much blacker colouring; hence the appropriate name suggested by Mr. Gould. This species is found in all the wooded parts of the interior mountain-range, feeding largely on berries and the small figs of the numerous species of *Fici* that abound, including those of the Chinese Banyan (*F. nitida*). Insects also form part of its subsistence, chiefly small Coleoptera. It rambles in small parties, in winter, about the high country, and may be found at all altitudes that are clothed with forest. In the spring these parties break up, and the birds disperse for the purpose of nidification. At this season a few pairs may be found in the better-wooded portions of the low country.

On my trip into the interior in the latter half of April, I observed one of these birds in an orchard composed of venerable moss- and fern-covered trees. It perched on the highest twigs of the trees, giving utterance to its song, which consisted of the notes "*swee-swee-swee,*" repeated loudly and in quick succession. There was not much melody in it. When it observed me, it flew to a further tree, whence finally I shot it.

These birds are longer-winged and smarter in flight than the *Pycnonotidæ*, but as regards general habits are closer in their affinities to them than to any other group.

47. Ixos sinensis.

Muscicapa sinensis, Gmel.

Turdus occipitalis et *palmarum,* Temm.

Pay-tow-kok of Amoy and Formosan Chinese.

This is the commonest of the *Pycnonotidæ* in Southern China; it is said to be also very common in the Philippines, and in Formosa is our only species, being found in great abundance throughout all the low country. My specimens vary chiefly in the proportions of white and black on the head. I have one peculiar variety from Amoy. The Formosan form is essentially identical with the Chinese bird, having no special peculiarities of its own. It is, however, a bird abundant on the coasts of both the island and the main, and possesses no mean powers of flight; and though usually resident in localities where found, there could be no difficulty in supposing it occasionally to transport itself across the channel.

Bill and legs black. Iris rich brown. Crown, moustache, and nuchal band black. Auriculars brown, ending in a large white spot. Upper parts brownish grey, each feather being margined laterally with yellowish olive-green. Quills and tail hair-brown, margined on outer webs with greenish yellow. Throat white; a broad pectoral band of light greyish brown. Under-parts pure white in most specimens, with only a few yellow streaks; in others dingy yellowish white, most of the feathers margined exteriorly with sulphur-yellow. Under-wing whitish, the 4th and 5th quills equal and longest. Tail-feathers 12, somewhat graduated, with white under-shafts.

The young, before the autumnal moult, have the entire upper parts and pectoral band brownish grey, deeper and somewhat mottled on the head. The back has a tinge of yellowish green, and the quills and tail are margined with the same. The bill and legs are brown; the iris greyish; the throat and under-parts pure white.

These birds subsist partly on insects, and partly on berries and small wild figs. In habits they connect the *Fringillæ* and the *Muscicapæ*, assembling, like the former, in large flocks and flying from tree to tree in noisy concert in search of berries, and, like the latter, pursuing insects in the air. They have no habits in common with the skulking *Garrulax*, preferring rather to show themselves tame and conspicuous; no creeping from bush to bush, and chattering in low and coaxing whisper, in their case; but, perching on the tops or exposed parts of bushes and trees, they assemble and utter loud notes,—often, when so engaged, ruffling their crests, rounding the back and tail, and making the tips of their wings meet over their heads. Their notes are very varied, but strikingly peculiar, and I would try to syllable them if there was any chance of conveying to the reader an idea of their natural sounds. In April they commence nesting, but still keeping together in parties, which meet after the business of the day is over and amuse themselves till nightfall. They mostly build three nests in the course of the season, occasionally four, laying in the first nest usually five eggs, in the others that succeed three. In the interior the nest is large and deep for the size of the bird; it is usually made of grasses, lined with finer samples; but in the materials these birds are by no means particular, almost anything they can gather, such as scraps of paper, cotton, cloth, leaves, and feathers, being added. In the site too they are not regular; any bush or tree, of almost any height from the ground, will serve their purpose; and in the usual choice of their position they show as little discernment as the Hedge Sparrow (*Accentor modularis*) at home, frequently placing their nests in most exposed situations. They generally nestle in gardens close to the habitations of Chinese, and, being familiar birds, are protected. When their nest is approached, they make a great chattering; but they have far less to fear from man than from Magpies and *Garrulaces*.

Their eggs are of a purplish-white ground-colour, spotted closely and often confusedly with dark shades of brownish purple-grey. They measure ·9 by ·65 in.

48. SPIZIXOS SEMITORQUES, Swinhoe, Ibis, 1861, p. 266.

In shape of bill this singular bird a good deal resembles a

Paradoxornis, but in habits and general form it is a true *Ixos*. In China I have never found it anywhere but on the plateaux, 2000 feet high, near Foochow. They were usually to be seen perched on the tops of the twigs that were raised above the low bushy copse, and when disturbed, would drop at once under cover. Remains of *Cicadæ* and field-bugs were found in their stomachs, together with berry-seeds.

From the high ranges of Formosa my hunters brought me a solitary specimen, which appears to tally exactly in colour with the Chinese bird, but is smaller and has shorter wings and tail. I have unfortunately only this one, and that rather injured, and cannot therefore institute a satisfactory comparison between the two races.

49. ORIOLUS CHINENSIS, L.

The Formosan black-naped Oriole is identical with the bird that visits China in summer, varying, like it, in size, in length, and proportions of bill, thus proving that its southerly migrations are to Cochin China rather than to the Philippines, where the larger *O. acrorhynchus*, Vigors, with no yellow wing-spot, appears to be the only species. This wing-spot is, however, scarcely a constant character; for though I have not detected the absence of it in any of my Formosan specimens, yet I have one from Canton in which it is entirely missing. This Oriole arrives in Formosa about the end of March in large numbers, and distributes itself over the flat country of the island, being rare in the hilly regions near Tamsuy, but specially abundant in the bamboo-groves of the south-west. It is by no means so common in any part of China as in Formosa. It feeds on insects, but more largely on berries and small wild figs. Its note is rather harsh; and the song of the male is short, loud, and far from melodious.

Measurements from a fresh specimen:—Length $10\frac{1}{10}$ in.; wing $5\frac{8}{10}$; tail $3\frac{8}{10}$; fourth quill rather longer than the third, and longest in the wing. Tail-feathers somewhat graduated, and angularly ended. Bill in the young bird pale dingy flesh-colour washed with brown, and blackish chiefly on the upper mandible. Inside of mouth light flesh-colour; tongue cleft at the tip and ciliated. Eye-rim dark yellowish brown. Iris greyish brown. Legs rich leaden violet, with pale yellowish sole-pads, and light edges to scutes; claws black, with pale edges. The immature bird is strongly tinged with olive-green on the upper parts, the crown being yellower, and the quills of a lighter black. The two central tail-feathers are greenish yellow, and the dark parts of the rest more or less impregnated with that colour. The throat, breast, and belly whitish, marked with long black streaks, very faint on the first of the three. When the birds return in the spring, the plumage has undergone a decided change. The bill has become pinkish, still marked a little with brown; the black nape-band has appeared. The yellow of the upper parts and wings is still strongly tinged with olive-green; but the dark parts of the tail-feathers and the two central ones are almost entirely blackened. The under-parts have become bright yellow; but the streaks still continue, though fainter. In the next moult the streaks disappear; the black and yellow parts become brighter; but the back is still tinged with green. On the second spring-return all the light parts have become a fine golden yellow, except the tips of the primaries, which are whitish; and the black has intensified to a glossy hue. The bill has become a fine clear pink, the legs a fine dark slate-colour, and the iris a speckled purplish brown. When quite mature, the males and females are similar, but the adult plumage of the male is more quickly developed than that of the female; and hence, though you very frequently see a green and spotted female paired with a yellow male, and breeding, it is only males of late broods of the previous year that are seen breeding in immature plumage. This is consequently a much rarer sight; but it does occur. I have dissected birds in full plumage, and found them to be females. Mr. Blyth tells me that he has observed the same facts with regard to the Indian Orioles; and Prof. Schlegel has lately assured me that the same holds good with the European bird, *O. galbula*. I have known this to be the case with many birds, the *Laniidæ* for example. The male in mature and the female in immature plumage are usually found together; but later investigations have proved that in course of time the female acquires the same plumage as her lord—for some reason or other her plumage requiring longer time to develope than that of the rougher sex. In an adult, shot Sept. 27, 1861, the iris was light brownish pink, with an outer broader brown circle; the skin round the eye was light madder-brown.

50. PSAROPHOLUS ARDENS, Swinhoe, Ibis, 1862, p. 363, pl. 13.

I must refer my readers to the above volume of 'The Ibis' for an account of the adult of this bird.

All my specimens of this species were procured near Tamsuy in March and April 1862. The most immature form I possess has the head, hind neck, axillaries, and tibiæ black; throat and neck blackish brown, each feather margined with whitish brown. Upper parts dingy crimson, each feather with a brown shaft; tail washed with brown. Wing-coverts and wings deep brown. From a few feathers that still remain only partially changed, I should judge that in the plumage of the nestling the entire upper parts were dark brown, and that the transformation is effected, not by moult, but by change of colour in each feather. Under-parts brownish white, with long black streaks, the vent, sides of breast, and flanks becoming crimson.

In a more advanced specimen the colours have deepened; only a few streaks remain on the belly, and crimson underneath is fast taking the place of whitish. I have a third where the crimson on the under-parts has diffused itself, yet a few streaks remain. The upper parts are rich, but not dark, and most of the feather-shafts are whitish; many of the under-feathers are margined with whitish.

In others the plumage is quite complete and brilliant, as I have described it before. The basal part of the crimson feathers is everywhere a pure white in all the skins. Fourth quill longest in the wing. Tail-feathers 12, with white under-shafts, somewhat graduated, and angularly tipped.

The female in adult plumage does not differ from the male.

51. HERPORNIS XANTHOCHLORA, Hodgs.

Erpornis xanthochlora, Hodgson, P. Z. S. 1845, p. 23.

I received one specimen only of this interesting bird, from the mountainous interior near Tamsuy. It tallies almost exactly with the Nepalese species, except that the bill and tail are both shorter, and the green of the back is darker, without so much of the yellow tinge. My single specimen I have been able to compare with one sent me by Mr. Blyth; but I dare say, if I had a series of both, the resemblance would be found to be still more complete. At present I do not feel justified in separating them. Our bird, when fresh, had the bill a light wood-brown, paler on the lower mandible, with yellow rictus. Legs light brownish-ochre flesh-colour, the claws being tipped with brown. I never saw this bird alive, and can therefore record nothing of its habits. In form it seems to connect the Willow-wrens (*Phylloscopus*) with the *Pycnonotidæ*. Length $4\frac{4}{10}$ in.; wing $2\frac{6}{10}$ in.; tail $1\frac{8}{10}$ in., of twelve equal feathers; bill $\frac{1}{2}$ in. Upper parts yellowish olive-green; crown-feathers large, with blackish shafts. Shafts of tail-feathers blackish brown. Shafts and inner webs of primary and tertiary quills deep brown, blacker on former. Cheeks and under-plumage brownish grey, more or less whitish. Axillaries, under-edges of quills, and vent greenish yellow. Bill somewhat conically shaped. Legs and feet strong, hind toe remarkably so.

This species is recorded from Nepal, Arracan, and Malacca, and is probably also found on the mountains of Southern China.

52. Zosterops simplex, Swinhoe, P. Z. S. 1862, p. 317.

Z. japonicus, mihi, Ibis, 1861, p. 35.

Length 4 in.; wing $2\frac{3}{10}$ in.; tail $1\frac{6}{10}$ in., of twelve nearly equal feathers. Bill and legs leaden or slate-colour. Iris blackish brown. A ring of white feathers round the eye. Upper parts yellowish green, yellower on the head. Forehead, throat, under-neck, and vent sulphur-yellow. Axillaries white. Under-parts light brownish grey, with sometimes a ruddy tinge diffused. Quills and tail dark hair-brown, margined exteriorly with yellowish green. Under-edges of quills and under-shafts of quills and rectrices white.

This species may be at once distinguished from the Northern Chinese species* by the absence of the deep rust-colour on the flanks and sides of breast, by its smaller size, and by the presence of the diminutive first primary, which in the other species is said to be entirely wanting. The Formosan bird is identical with that found throughout Southern China, from Canton to Foochow. In winter it roams about in small parties, like the Tits, from tree to tree, searching every twig for *Aphides* and other small insects. When engaged in the pursuit of its food, it hangs in all manner of attitudes, uttering the while a peculiar call-note. In spring it utters a short, sweet song. It is a bird very easily tamed in confinement, even when kept several together; and in most towns in South China it may be seen as a cage-bird. At feeding-time they are particularly lively; but when satiated, settle on their perch, sidling up to their companions, and after caressing one another for a short time, all ruffle their feathers and dip their heads under their wings. The siesta they take is not long. They all wake up suddenly and feed again, the males often putting forward the head and singing their soft melodious notes. This habit of taking mid-day siestas I have also observed in the *Parus caudatus* in confinement. The *Zosterops* is very fond of bathing; and for food, besides insects, is partial to fruit, showing an especial fondness for plantains or bananas, on which it may be almost entirely sustained. For particulars on its nesting, I must refer my readers to my Canton List (see Ibis, 1861, p. 35).

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* The *Zosterops* of N. China (*Z. erythropleurus*, mihi) is not identical with the Japanese species, as I have recently ascertained. See P. Z. S. 1863, May 26th.—R. S.

53. PARUS CASTANEIVENTRIS, Gould, P. Z. S. 1862, p. 280.

A diminutive representative of the curiously coloured *P. varius* of Japan (Fauna Japonica, p. 71, pl. 35), but quite distinguishable enough to be noted as a local specific form of the same type. It appears on the island of Formosa to be entirely restricted to the interior mountain-chain, where it is said to be by no means common. I have never found it on the cultivated hills, nor yet in the plantations on the plains; and, strange to say, no species of *Parus* whatever occurs to take its place there. Never having met the bird alive, I have no note of its habits.

Bill black. Legs and claws leaden grey. Length $3\frac{2}{10}$ in.; wings $2\frac{1}{3}$ in.; tail $1\frac{1}{2}$ in., of twelve feathers, slightly graduated; tarsi $\frac{5}{8}$ in.; fourth quill rather the longest in the wing. Bill and legs strong, the former resembling that of *P. ater*, L. Head and hind-neck black; a large spot of white on the latter, extending some way into the former. Throat, as far as breast, black, uniting with the black at bottom of hind-neck, and leaving the forehead, space under the eye, and cheeks white. Upper parts deep leaden grey, with a few rufous feathers adjoining the nuchal white spot. Tail the same colour as the back, washed with brown, with blackish shafts, and with narrow white tips to some of the feathers. Quills blackish brown, the primaries and secondaries margined exteriorly, and the tertiaries washed, with the colour of the back. Axillaries, carpal edge, and under-edges of quills white. Rest of the under-parts deep cinnamon-rufous.

This species may at once be distinguished from its near ally from Japan not only by its much smaller size, but also by the almost entire absence of the rufous on the upper back.

54. Alcippe morrisonia, n. sp.

This species, which appears to be half-brother to the Nepalese bird, *A. nipalensis*, Hodgs., is a very abundant resident in the interior of Formosa, frequenting wooded localities on the mountains, seldom under an altitude of 2000 feet. It is by no means a skulking bird, exposing itself on the large branches of trees, and frequently alighting and hopping along the ground. It feeds chiefly on insects, and, it is said, also on seeds, but this I am inclined to doubt.

Length 5 in.; wing $2\frac{6}{10}$ in.; tail $2\frac{3}{10}$ in., of twelve feathers, somewhat graduated, and angularly tipped. Fourth quill longest in the wing. Tarse ·76. Bill greyish black. Legs sienna-ochre; claws the same, tipped with blackish. Irides greyish brown. A ring of white feathers girdles the eye. Head, neck, and higher back brownish ash-colour, rather whitish on the throat and between the bill and eye; a broad, somewhat obscure black line runs down on either side of the hind-neck. Rest of upper parts olive-brown, redder on the rump. Tail-feathers obscurely barred, with their shafts dark brown. Inner webs of primary and secondary quills deep hair-brown. Breast, belly, carpal edge, and axillaries ochreous white. Flanks, tibiæ, and vent brownish buff-colour. Under-edge of quills and under-shafts of tail-feathers buff-white. Bristles on the loral space black, strong, and conspicuous. Sexes similar.

In May I procured a newly-fledged young one. Its head is brownish grey. The rest of the upper parts of a reddish sepia, instead of olive. Its belly and throat are whitish, and the remaining under-parts much browner than in the adult. In general character of colouring our bird agrees with *Liothrix* (*Alcippe*) *nipalensis*; but on comparing my large series with a specimen of that bird from Mr. Gould's collection, I note the following constant distinguishing characters. Our bird has the bill much longer and more slender; the tarse a good bit shorter, and the feet stronger; the tail less graduated. Ours wants the strong white patch in front of the eyes; the under-parts are much more brightly washed with ochreous; the axillaries are fine ochreous instead of pure white, and the upper parts are more rufescent olive. Otherwise the similarity is very great; but nevertheless, as the differences above given are constant, I have thought myself justified in separating our bird, and have named it after my friend Captain Morrison, who was for some time with me in Formosa, and assisted me in my investigations in the cause of science.

Independent of the above species, Formosa produces another of this genus,

55. ALCIPPE BRUNNEA, Gould, P. Z. S. 1862, p. 280.

This is a larger and browner bird than the preceding, with larger bill, but has the same black double streak on the back of the neck. The sexes appear to be similar, as in the foregoing. Bill greyish black. Legs and claws yellowish brown, with a strong tinge of yellow. This is also a mountain bird, and not observed on the plains. Its legs are much stronger, and its nails, especially the hind one, larger and more straightened. Its tail, too, is much more graduated, the outermost feather being $\frac{3}{10}$ in. shorter than the central, and all the feathers narrowing to their tips. The fifth quill is a little longer than the sixth. Length $5\frac{4}{10}$ in.; wing $2\frac{1}{2}$; tail $2\frac{2}{10}$; tarse $\frac{3}{4}$. Upper parts reddish sepia, the feathers of the head being large, rounded, and obscurely margined with black. A broad deep-black line runs from the head, above the eye, down each side of the hind-neck. Wings and tail sepia-washed, and edged with a deep-reddish tinge of same. Chin, loral space, and round the eye rufescent.

Cheeks, sides of neck, breast, and axillaries greyish brown. Flanks, tibiæ, and vent of the same colour as the back. Rest of under-parts brownish white. In older birds there is less rufous on the face, and the under-parts are greyer and darker. The loral bristles are not so long and conspicuous as in the other species.

56. Pratincola indica, Blyth.

Occasionally met with on the Formosan plains during winter.

57. Ianthia cyanura (Temm. & Schl.).

Lusciola cyanura, Temm. & Schl., Fauna Japonica.
Nemura rufilata, mihi, Ibis, 1860, p. 54.
Ianthia rufilata, mihi, Ibis, 1861, p. 329.

Never observed but once at Tamsuy in March, when I procured a nearly adult male.

58. Calliope kamtschatkensis, Gmel.

I have one of this in full plumage, shot at Tamsuy in April. It is at this season that they touch at Amoy on their northward migration; and I suspect this is merely a passing straggler.

59. Ruticilla fuliginosa (Vigors).

Phœnicura fuliginosa, Vigors, P. Z. S. 1831, p. 35.
R. plumbea, Gould, P. Z. S. 1835, p. 185.
R. lineoventris, Hodgs.

This species, originally described from the Himalayas, is found as a winter bird on the hills of Foochow, near Amoy (China). From the Tamsuy hills, Formosa, I also procured several skins, in March, identically the same. ♂ Bill black; legs brown. General plumage deep bluish grey. Wings deep hair-brown, margined with the same. Rump, vent, central portions of tibiæ, and tail a fine rufous, the feathers of the latter in one specimen washed with black near their tips; in another and apparently older specimen there is no black on the tail, and the tibiæ are brownish, without any rufous.

The immature plumage is of a deep olive-grey on the upper parts, the face being somewhat rufous. The wings are sepia, margined with light yellowish brown; and several of the wing-coverts carry a white spot at their tips. The rump and vent are pure white. Tail deep sepia, all the feathers at their bases and the laterals for a great part of their length being white. Under-parts deep bluish grey, striated and mottled with white. As the bird gets older, the mottling and white wing-spots disappear and the white on the tail contracts. It is in this young plumage the *R. lineoventris*, Hodgs.

The female, I believe, always carries a partially immature plumage. She is usually of a dingy smoke-grey, rather bluer on the upper parts. Chin whitish. The under-plumage more or less obscurely mottled. Vent, basal half of lateral rectrices and a greater or less portion of all the others, and a narrow band on the upper tail-coverts white. Rest of tail sepia. Wings the same, margined paler.

60. RUTICILLA AUROREA (Pall.).

A few of these may be seen in the low country in winter.

61. DRYMŒCA EXTENSICAUDA, Swinhoe, Ibis, 1860, p. 50.

I have a series of this species both from South and North Formosa. They are undistinguishable from the South-China bird, except in being rather larger, and having usually more robust bills. The bill in this bird, which is light in winter, becomes almost entirely black in the breeding-season.

They are found throughout all the low country of Formosa, affecting places covered with coarse long grass, about the tops of which they flit and twitter, throwing their tails up and from side to side as they spring up the long grass-blade. Their song is merely a quick repetition of their usual twittering call-note. They feed on small Dipterous caterpillars and other insects. Their nests are very elegant little pieces of workmanship, consisting of a deep cup with a canopy, entirely composed of fine grass. When first made they are quite green, and elude well the eye of search as they stand sustained between the stems of long grasses. The bird lays from three to seven eggs of a light greenish blue, spotted, blotched, and waved, chiefly at the larger end, with various shades of chocolate-brown. They average ·55 by ·48, but vary in size and shape, and the distribution of the chocolate markings assumes all manner of fanciful forms. I have a very large series, and they are, I think, the prettiest eggs I have ever seen.

In China the species abounds in all suitable localities from Canton to Foochow. All my specimens, both from China and Formosa, have a pair of thick black bristles, curved backwards, springing from the base of the bill, on the edge of the rictus; and the tail contains only ten rectrices.

A nest, containing four young *Drymœcæ*, was brought to me in August. The sides of the nest were too deep for the young to void their excrement over; it is always voided in compact mass and inside the nest, and must, I think, be carried away by the parent birds. The feathers of the back and breast first opened, those of the wing next, the head-feathers somewhat later, and the rectrices last of all. The bill of the youngsters was ochreous yellow; the angle and inside of mouth light yellow, except a little blackish near the base of the tongue. Iris blackish brown; skin round the eye brownish yellow. Bare skin of the face light yellowish grey; the rest of the naked parts a raw flesh-colour. Legs and toes the same, somewhat fulvous on the claws and tibial joints.

62. DRYMŒCA FLAVIROSTRIS, n. sp.

In Taiwanfoo, S.W. Formosa, I procured one example of another of this genus, similar to the preceding species, but differing strikingly in its short yellow bill. It has, however, the two strong black bristles at its base. Its tarsi are much longer, with longer toes and larger and stronger hind claw. The throat, loral space, and face are also nearly white, instead of straw-colour. The upper parts are a different shade of olive-brown, tinged with rufous, and the wing-feathers are broadly edged with rufous brown. Wing $1\frac{9}{10}$ in., rather differently formed, with the fifth quill somewhat longer than the fourth and sixth. Its tail is much shorter, but I do not think this appendage is fully developed in my single specimen.

In North Formosa I did not meet this species again, and think therefore that it is restricted to the flat country of the south, where it may be abundant; but its resemblance to the foregoing, I suppose, was the reason that I did not detect it in its wild state. *Drymœcæ* were common enough about Taiwanfoo; but thinking them identical with the Chinese species, I did not care to procure many specimens until it was too late.

63. Suya striata, Swinhoe, Journal N. C. B. Asiatic Society at Shanghai, 1858.

♂, shot Dec. 24:—Length $5\frac{7}{10}$ in.; wing $1\frac{8}{10}$; tail $3\frac{1}{10}$. Upper mandible and apical half of lower dark purplish brown. Basal edge of upper and half of lower dingy flesh-colour. Tongue long, sagittate, deeply concave, and split at the end, ochreous flesh-coloured. Skin round the eye light yellowish brown; iris orange. Ear yellowish brown, oval; outer half crescent-shaped, forming an operculum. Legs orange-ochre, with flesh-coloured joints and toes; claws light yellowish brown, blackish at their tips.

This appears to be the largest known form of this Nepalese genus of Long-tailed Grass-warblers. I have not as yet noted any species of it on the hills of China. Its range in Formosa appears to be very limited, for I have only found it on the hilly country extending from the south of the Tamsuy River to the plains beyond Hongsan on the west coast (lat. 24° 35′), in which it generally occurs among the copse-clad ravines about 1000 feet above the sea. In these places it soon makes itself observed by its constant habit of springing up to the tops of long grasses, frisking about, and throwing up perpendicularly its long tail, uttering the while a curious jingling note very unlike that of any bird I know. It boasts of no short, pleasant song like *Prinia sonitans*; but the series of somewhat varied notes it gives forth from the eminence of a tall twig, while its tail hangs down perpendicularly and its body remains motionless, may have some claim to wild melody. I came across the species three or four times in my rambles up the hills, but its nest I was never able to find.

The sexes of this bird are similarly coloured; but they differ greatly in size, the female being every way much smaller. This is not the case with the allied *Priniæ* or *Drymœcæ*; but strikingly so in the *Megaluri*, to which our species further approximates in having a very long tail.

♀, shot in February:—Length $5\frac{4}{10}$ in.; wing 2; tail 3; tarsi ·75. Bill pale yellowish, washed on culmen and apical portion of lower mandible with brown.

♂ in adult plumage, shot in March 1856:—Length 8 in.; wing $2\frac{2}{10}$; tail $4\frac{7}{10}$; tarsi ·87. Bill black, with a pale tip.

Upper parts sepia-brown, the feathers being centrally darker and margined with yellowish grey. Feathers of the head large and roundish, those of the back large and oblong; all soft and lax. Wings yellowish brown, margined with light reddish brown; the fifth and sixth quills rather longer than the fourth, and longest in the wing. Tail yellowish brown, paler edged and obscurely barred, the feathers being tipped with blackish, margined with whitish, and having strong brown shafts. Rectrices ten in number, much graduated, the laterals being $3\frac{2}{10}$ in. shorter than the centrals, which exceed the two next by 1 in. Lores, space round the eye, cheeks, and under-parts with a pale dingy-ochreous tinge, with a few dark specks interspersed. Axillaries and carpal edge straw-colour; under-edge of interior quills light rust-colour. Tibiæ rufous. Two strong black bristles are given out from the base of the upper mandible on each side, and several smaller ones from the chin.

This species has its nearest ally in *Suya lepida*, Hodgs., of the Himalayas, but is at once distinguishable by its very much larger size.

64. PRINIA SONITANS, Swinhoe, Ibis, 1860, p. 50.

This bird, found in all gardens and hedgerows throughout the plains of Formosa, is identical with that found on the Chinese main, from Canton to Foochow. It has only ten feathers in the tail, and two stiff black bristles on each side of the base of the upper mandible, together with several shorter ones under the eye and on the chin. It creeps about the bushes and long grass, making a cracking noise, I think with the tail, as it springs from stem to stem. It has a long, trilling call-note, and a short, sweet song, which the male gives forth as it stands perched on some prominent twig. It has also a curious alarm-note, resembling something the mew of a kitten. It is fond of frisking its tail about and throwing it up. It feeds on small insects, chiefly Diptera and caterpillars. It attaches its nest usually between the stalks of long grasses; at other times it places it in bushes. The nest is composed of dried grasses, fibres, and leaves, cup-shaped, covered with a broad-domed canopy, and lined with feathers and hair. It builds three nests in the course of the season, laying in the first seven small, round, maroon-coloured eggs; in the two next, five a-piece—seldom less. The birds of the year are olive-green on the upper parts, with none of the blackish grey on the crown that adorns the adult bird. In the moult of the following spring the transformation into the adult plumage is complete.

In August 1861 I examined some young ones at Taiwanfoo. They had the bills blackish brown on the culmen; the remainder and inside of mouth, except just a little black at the base of the tongue, being bright orange-yellow. Over and under the eye, to base of bill, bright sulphur-yellow. Legs and claws light orange-ochre.

I have a very large series of the eggs of this bird. They average ·58 by ·46, and are usually maroon-colour, obscurely blotched and spotted with a deeper shade of the same; but some have the ground-colour white, or nearly white, spotted chiefly at the larger end with maroon-red; others have a deep brownish-maroon ring round the apex, others the same round the middle. The spots and shades are varied in every conceivable way, and, in looking through the series, the size and even the shape are found to be by no means uniform.

65. CISTICOLA SCHŒNICOLA, Bp.

C. cursitans, Franklin.
C. brunneiceps, Temm. et Schl., Faun. Japon.
C. tintinnabulans, Swinhoe, Ibis, 1860, p. 51.

"Length $4\frac{1}{2}$ in.; wing $2\frac{2}{10}$; tail $1\frac{8}{10}$. Bill brownish flesh-grey, much darker on culmen. Iris light yellowish brown; skin round the eye blackish brown. Inside of mouth black. Ear-covert oval, nearly as large as the eye; operculum large and exposed. Legs and toes ochreous flesh-colour, somewhat browner on claws." The above refers to a fresh specimen killed at Tamsuy in April. I have six specimens from Formosa, three from India, and several from China. The Indian birds are smaller and more rufescent, but they present entirely the same style of colouring as the rest of mine, the oldest bird having a uniform brown crown, as in the single individual from Japan, from which the description in the 'Fauna Japonica' is taken. My Formosan specimens differ a good deal in size and markings, in length of wings, in length and bulk of bill, and in height of tarse. One of them also has the crown a uniform deep brown. I therefore cannot help agreeing with Mr. Blyth in considering all the allied forms of Eastern Asia simply as local varieties of *C. schœnicola* of Southern Europe.

This is the prevailing species on all the lower grassy hills, from the banks of the Tamsuy River right to the south. At Tamsuy it disputes the ground with the species that follows, and I do not think it is found much further north or on the east side. In China it is abundant in all suitable localities, from Canton to Peking; and it also occurs in Japan.

The eggs of our bird vary from three to five, are thin and fragile, and of a pale clear greenish blue.

66. Cisticola volitans, Swinhoe, Journal of N. C. B. of Asiatic Society at Shanghai, 1858.

Crown and under-parts pale straw-colour, rufescent on the axillaries and tibiæ. Back and wing-coverts deep brown, margined with brownish grey. Wings hair-brown, margined deeply with yellowish brown. Rump yellowish brown. Tail blackish brown, margined and broadly tipped with pale yellowish brown. Under side of inner quills pale rust-colour.

Length $3\frac{7}{10}$ in.; wing $1\frac{8}{10}$; tail $1\frac{2}{10}$. Bill ochreous brown, darker on gonys than above. Iris ochreous straw-colour. Skin round eye yellowish brown. Inside of mouth black, marked with ochre-yellow. Rictus light greenish ochre; ear the same. Legs dark ochre, with light claws. This diminutive species with whitish head and short tail, apparently peculiar to Formosa, abounds on all the grassy hills in the north-west about Tamsuy, in the north about Kelung, and in the north-east about Sawo. It seems to replace on the mountains the common species, *C. cursitans*, of the lower hills; and in the country about Tamsuy (the northernmost range of the latter), it is found frequently in company with it. In habits it much resembles the common species, dropping, when pursued, into the thickest grass, about the roots of which it creeps, and whence it is hard to flush it. It frequently perches on the summit of grass-stalks, and is then at once recognizable by its white head. It has a short flitting flight, and frequently springs into the air some twenty or thirty feet, uttering its well-marked notes, *tee-tee-teup-teup*. In June 1857, when circumnavigating Formosa in H.M.S. 'Inflexible,' I first made the acquaintance of this species at Sawo, and afterwards at Kelung. It was then its breeding-season, and the numbers that abounded about the long grass were uncommonly lively; but its very diminutive size and activity precluded my obtaining more than one specimen of it. This I described the same year, at a meeting of the North China Branch of the Asiatic Society, under the above name. In Tamsuy I found it very locally distributed, and much rarer than *C. cursitans*. It was only after great difficulty that, through the aid of my constable, I was enabled to add another example to my collection, and the high and remote localities it inhabited prevented my obtaining any facts as to its nesting or other habits. I think I am right in laying down its habitat in Formosa as restricted to the hills on the eastern and northern portion of the island, Tamsuy being probably its most southerly range on the western side.

The feathers of the tail of this species broaden to their ends, and are graduated, the external one being ·46 in. shorter than the central. The first quill of the wing is very short, the third and fourth being nearly equal and longest. Both our species of this genus have twelve feathers in the tail, and so approximate to the *Salicariæ* rather than to the *Drymœcæ* and *Priniæ*, which they resemble in many respects.

67. CALAMOHERPE ORIENTALIS, Bp. Consp. p. 285.
Salicaria turdina orientalis, Schleg. Faun. Japon. p. 50.
Acrocephalus magnirostris, Swinhoe, Ibis, 1860, p. 51.

This Eastern form of Reed-Thrush visits Formosa in summer, and may then be found in all wet localities abounding in tall reeds. It has a most powerful and polyglot voice, and delights all day, and often greater part of the night, in making itself heard. I have traced it in China as far north as Shanghai; and it also occurs in Japan. In summer it seeks more southerly latitudes.

68. CALAMOHERPE CANTURIANS.

Arundinax canturians, Swinhoe, Ibis, 1860, p. 52.

This bush-loving species, common in China (from Canton to Shanghai), is also found in Formosa. Indeed, it was in Formosa that I first discovered the species in 1856. I for a long time thought that this was merely the *S. cantans* of the 'Fauna Japonica,' but my late visit to the Leyden Museum has decided this question in the negative.

♂, shot at Tamsuy, 6th March, 1862. Length 6·6 in.; wing 3; tail 3. Its gizzard contained Diptera and larvæ.

It appears to be with us a resident species, as I have procured specimens in winter as well as in summer. It creeps about the hedges much in the manner of *Sylvia cinerea* of Europe, and utters a warning note, when approached, a good deal resembling that of that bird. Its song is a short trilling note, sweet, but never varied.

69. CALAMOHERPE MINUTA.

Arundinax minutus, Swinhoe, Ibis, 1860, p. 52.

This miniature of the above is also a bush-frequenting bird, but of livelier habits. It is quite distinct from *Salicaria cantillans* of the 'Fauna Japonica.' I have repeatedly procured it at Amoy in spring; but I have reason to think that in South China, as in Formosa, some stay all the year through. It suspends its pretty nest between the stalks of grasses and reeds. It is formed of grasses and fibres, lined with finer materials and catkins. The inside cup is very deep, and usually contains five clear greenish-blue eggs, averaging ·64 by ·5 in. When disturbed on its nest, the bird flies to an adjoining tree, hiding itself among the foliage, but continuing to repeat an impatient "*churr*" note until the intruder moves away.

70. PHYLLOPNEUSTE FUSCATA.

Phylloscopus fuscatus, Blyth.

Sylvia (*Phyllopneuste*) *sibirica*, Middendorff, Sibirische Reise, p. 180.

This brown Siberian species of the Willow-Wren group appears in winter to spread itself all throughout India and China, and a few find their way during that season even to Formosa.

71. PHYLLOPNEUSTE CORONATA.

Ficedula coronata, 'Fauna Japonica,' t. 18.

Summers in North China, the Amoor, and Japan; and winters in South China, at which season a few visit Formosa.

72. PHYLLOPNEUSTE SYLVICULTRIX.

Phylloscopus sylvicultrix, Swinhoe, Ibis, 1860, p. 53.

A summer visitant to South China, passing in large numbers through Amoy in its autumnal migrations south-eastwards, probably to the Philippines. In these passages it touches at South-west Formosa; and at Taiwanfoo, for a few days in October, I found them abundant. I neither saw them before nor afterwards; nor did I meet with them at Tamsuy. I have the following note on a specimen shot at Taiwanfoo, 10th October, 1862:—"Length $4\frac{4}{10}$ in.; wing $2\frac{2}{10}$; tail $1\frac{3}{10}$. Bill light olive-black, with edges and basal half of lower mandible yellowish. Inside of mouth and rictus bright yellow. Eyelid black; iris dark brown. Legs and claws olive-brown, somewhat washed with olive-yellow, especially on joints."

73. REGULOIDES SUPERCILIOSUS (Gmel.).

Regulus modestus, Gould.

Reguloides proregulus of Blyth, and of my former lists.

I always understood this species, which is identical with Mr. Gould's Dalmatian Gold-crest, to be the *Motacilla proregulus* of Pallas, until the other day, at Leyden, Prof. Schlegel told me that he thought Pallas's description applied rather to the *R. chloronotus,* Hodgs.; and on carefully perusing the 'Zoograph. Rosso-Asiat.' (p. 499) I certainly find this to be the case. Pallas there tells you that he observed his bird in the beginning of May, in Daüria; and in the description that follows distinctly says, "Dorsum cinereo-flavum vel virescens, ut et tectrices caudæ; *sed zona lata uropygii albido-flava.*" (Mark the words in italics.) This whitish-yellow rump-band never occurs in the *R. modestus,* but always in the *R. chloronotus,* Hodgs. I found both species common at Peking in summer, and they doubtless also pass that season in Siberia. In winter both species spread down the coast of China, and away even to the plains of India. The *R. modestus* is generally met with singly; the *R. chloronotus* in pairs. In the note to his article on *Motacilla proregulus,* Pallas also alludes to the *R. modestus,* doubting whether a bird of this last species received from the banks of the Lena, and which he had referred to *Motacilla acredula,* L., might not be the female of his *M. proregulus.* Such a doubt has probably entered the head of every field-naturalist on first encountering the two species, but a careful study of the two birds soon dispels it. Let us turn to page 497, under the head "*Motacilla acredula*" (*i. e.* probably the Chiff-chaff, *Sylvia rufa,* Lath.). We find, in a note, mention made of the birds observed by M. Schmid on the Lena, which he had briefly described in a MS. as "*Reguli non cristati, omnium forte minimi.*" These were doubtless the *R. modestus;* but as no name was there suggested for them, we must look elsewhere for a title for our interesting little friend.

In winter it is not uncommon about woods and groves in Formosa, its loud single call-note, "*sweet,*" always attracting attention to its presence. It is very rarely in company with others, is lively and constantly in motion in pursuit of its insect-food, and seems to be entirely happy in its own resources.

A comparison of skins has amply proved that the birds from China, Formosa, and India are one and the same, and identical with the little Dalmatian (so-called) stranger procured on the coast of Yorkshire.

74. MOTACILLA LUZONIENSIS, Scop.

M. leucopsis, Gould.

This species, which can at once be distinguished from the two other Pied Wagtails of Southern China by its white face and want of black line through the eye, is a resident bird in Formosa. It is also smaller, and has a longer bill. There is much white on the wings. In summer the back becomes entirely black, and the black on the breast extends close up to the chin, within half an inch of the bill. Its eggs are very similar to those of the Pied Wagtail of England.

75. MOTACILLA LUGUBRIS, Pall.

M. lugens, 'Fauna Japonica,' pl. 25.

I procured one specimen of this in March, after a heavy gale.

76. Motacilla ocularis, Swinhoe, Ibis, 1860, p. 55.

This species is not so common as *M. luzoniensis,* but I also detected it breeding on our island. It has less white on the wings than *M. lugubris,* and a perennially grey back. In summer the whole of its breast and under-neck, from the bill downwards, becomes black. In the young plumage, *M. lugubris* can be always distinguished by its much whiter wings; and in the adult winter plumage, by its black carpal region and its black-spotted back. In summer the difference is far more apparent. Both species have black streaks through the eye, which distinguish them to the most casual observer from the white-faced *M. luzoniensis.*

M. ocularis appears to range from Canton to Peking *.

77. Motacilla boarula, L.

Motacilla sulphurea, Bechst.

A common resident. A male, with the black on the throat just showing itself, used to visit every morning, in January 1862, a drain under my window. The wagging up and down of his hind quarters seemed incessant, even while the bird itself was standing still. While preening its feathers, still the tail wagged, not stopping even while the little fellow drew between his mandibles the feathers that form its coverts. The only moment of cessation I observed was when the bird stretched its wing and leg. It used to engage itself in catching the flies among a pile of stones, perching on the top, stamping its little feet, shaking its tail, and constantly turning round and round in the same place.

78. Budytes flava (L.), var. rayi.

Our South China form of Yellow Wagtail is the true *Motacilla flava,* L., having in full dress a grey head, and white chin and eyebrow. From North China (Tientsin) I have seen specimens not to be distinguished from the European *B. cinereocapilla,* with the entire head dark grey. In the island of Formosa the *Budytes* has the head uniform in colour with the back, and a yellow eyestreak in the adult plumage, being (except perhaps in the rather darker ear-coverts) barely distinguishable from the form peculiar to the British Islands. Indeed, so similar are the birds from these two widely separated localities, that I can scarcely do otherwise than regard them merely as varieties of the *B. flava*, their aberrancy from the typical colour and their cosimilarity being due to some insular and climatal causes which we cannot just now, with any certainty, fathom. The peculiar greenness of the head is constant in all my adult specimens, with one or two exceptions, which have more or less grey on the forehead, and an inclination of the eyebrow and chin to be white instead of yellow. This would doubtless likewise be found if a large series of British skins were examined. This apparent desire of nature to revert to the typical colour, and the absolute identity of the two forms in immature and undress plumage, resolve me in setting down the Formosan as a variety; for if we are to regard species as special creations, how can we reconcile the fact of two islands, separated by an entire hemisphere, producing the same form almost entirely restricted to themselves, and represented on their opposite mains and throughout the intervening vast tract of land by a single species, of which specimens procured from the extreme east and extreme west are positively identical?

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* I find, as I had suspected, that the Wagtail of this form from the interior of China, Siberia, and the Amoor, is always grey-backed in summer. In such case the black-backed race will be peculiar to the Japanese islands, and my *M. ocularis* will merely be a synonym of the *true M. lugubris* of Pallas. For the Japanese race I would propose the specific name *japonica.* —R. S.

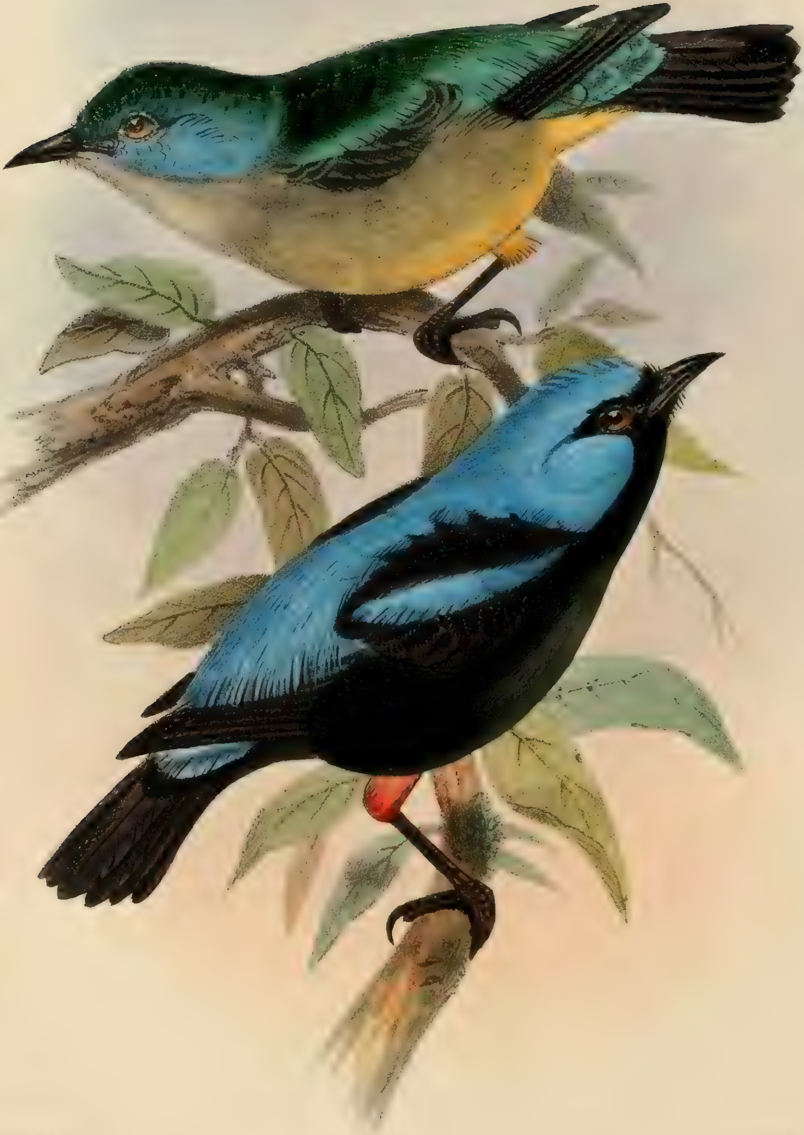
The Yellow Wagtail is with us, in Formosa, a constant resident, assembling in winter in large parties and remaining about the fields. In spring it pairs, and scatters itself about the country, resorting chiefly to the hill-side streams for the purposes of nidification. I suspect also that a good many repair to Japan for the summer.

79. ANTHUS AGILIS, Sykes.

A. arboreus (var.), ‘Fauna Japonica,’ tab. 23.

This Pipit is abundant in winter in all groves and copses, feeding about under the shadow of the trees. The younger birds are greener on the back and distinctly spotted: in this plumage they might almost be mistaken for the European *A. arboreus*. In the adult the upper parts become more sombre and the spots

Ibis, 1888, Pl. VII.



ans. lith. W. & N. Hanhart imp.

DACNIS VENUSTA.

obscured. In summer a rufous tinge diffuses itself over the entire bird, especially on the lores, eyebrows, and under parts, leaving, however, the centre of the belly nearly white.

They leave us for the north in spring, few, if any, remaining to breed.

80. ANTHUS CERVINUS, Pall.

A. pratensis japonicus, 'Fauna Japonica'?

Visits Formosa in large numbers during winter, accomplishes its vernal moult, and leaves us in April and beginning of May. This transformation of the winter into the summer plumage is not made by a changing of colour in the feathers, but by an entire moult even to the quills of the wings and tail. When the summer plumage is completed, no traces are left of the black spots and streaks on the throat and breast, which become a deep clear vinaceous. A few streaks, however, usually remain on the flanks.

81. ANTHUS RICHARDI, Vieill.

A very rare straggler to Formosa, though a common winter bird in South China.

[To be continued.]

XXVI.—*Synopsis of the known Species of* Dacnis.

By P. L. SCLATER.

(Plate VII.)

MR. LAWRENCE having kindly forwarded to me for inspection specimens of both sexes of a new *Dacnis*, which he has lately described in the 'Annals of the Lyceum of Natural History of New York,' as mentioned *anteà* (p. 110), I take the opportunity of giving a figure of this beautiful bird, and a short synopsis of the species of the genus, so far as I have any knowledge of them. My former papers relating to the same subject will be found in 'Contributions to Ornithology,' 1851, p. 106, and in the 'Proceedings of the Zoological Society' for 1854 (p. 253).

The twelve species of the genus *Dacnis* with which I am now acquainted may be divided as follows:—

a. Ventre et crisso concoloribus ..	α. Ventre cæruleo: mento nigro	1. *D. cayana.* 2. *D. cærebicolor.* 3. *D. nigripes.*
	β. Ventre albo	4. *D. melanotis.* 5. *D. angelica.*
	γ. Ventre nigro	6. *D. venusta.*
	δ. Ventre flavissimo	7. *D. egregia.* 8. *D. flaviventris.*
	ε. Ventre albicante	9. *D. pulcherrima.* 10. *D. plumbea.*
b. Ventre albicante; crisso rufo	....	11. *D. leucogenys.* 12. *D. speciosa.*

They are all easily characterized species, as will be seen by the short characters which I have appended to each. I should mention that Dr. Cabanis, who has lately obtained for the Berlin Museum a species of my *Dacnis hartlaubi* (described P. Z. S. 1857, p. 251), has convinced me that this bird, although it closely resembles *Dacnis melanotis* in colouring, is a true *Calliste*. I have therefore not included it in my present list.

The genus *Dacnis* and its congeners of the family Cœrebidæ seem to represent the Nectariniidæ of the Old World in the Neotropical Region. They may, however, be easily recognized by the entire absence of the first spurious primary, which is present in *Nectarinia, Dicæum,* and their affines. In this respect they agree with the Tanagridæ and Mniotiltidæ, with some forms of each of which families *Dacnis* may be easily confounded. But from the former *Dacnis* may be separated by its sharp-pointed bill and the entire absence of any notch in the upper mandible, and from the latter by the want of rictal bristles. The feathered tongue of the Cœrebidæ is a characteristic which, if observable in a skin, easily distinguishes it from both these groups.

The range of *Dacnis* is restricted to the hot tropical forests of South America, one species only extending up to the Isthmus of Panama. The valleys in the neighbourhood of Bogota appear to produce a greater number of species than any other locality we are acquainted with; but this may probably be owing to the fact that no other part of the Andean range has been so thoroughly worked. Six species occur in Bogota collections. Western Ecuador produces only two, both of which vary slightly in colour from the same bird received from Bogota, but are not specifically separable. In the forests of the Peruvian Amazon five species are found, and four of these were also obtained by D'Orbigny in Bolivia, on the upper confluents of the same river. S.E. Brazil possesses only the two widely distributed *D. cayana* and *D. plumbea*, and the peculiar *D. nigripes*. Guiana and Cayenne have the two first-named species, together with *D. speciosa* and *D. melanotis*. From Venezuela I have only seen examples of *D. plumbea* and *D. cayana*; but it is probable that *D. melanotis*, and perhaps *D. speciosa*, likewise occur there.

The following table gives the distribution of the twelve species of *Dacnis* in a concise form:—

	Panama.	Bogota.	Western Ecuador.	Peruvian Amazon.	Bolivian Amazon.	S.E. Brazil.	Guiana and Cayenne.	Venezuela.
1. cayana		—		—	—	—	—	—
2. cœrebicolor		—						
3. nigripes ..						—		
4. melanotis ..				—	—		—	
5. angelica ..		—						
6. venusta....	—							
7. egregia		—	—					
8. flaviventris .				—	—			
9. pulcherrima		—	—					
10. plumbea ..				—		—	—	—
11. leucogenys .		—						
12. speciosa ..				—	—		—	
	1	6	2	5	4	3	4	2

Concerning the habits, nidification, &c., of the species of *Dacnis* very little has as yet been recorded. They appear to live in small flocks in the tops of the highest trees in the forests, flitting from branch to branch, and searching for food. Prince Max. of Neuwied describes this, in the case of *D. cayana*, as being mostly fruit; but D'Orbigny speaks of the species met with in Bolivia as feeding entirely on insects.

1. Dacnis cayana.

Motacilla cayana, Linn. Syst. Nat. i. p. 336; Buff. Pl. Enl. 669. f. 1 (♂) et 578. f. 1 (♂). *Motacilla cyanocephala*, Gm. Syst. Nat. i. p. 990. *Dacnis cyanocephalus*, D'Orb. Voy. Ois. p. 221. *Fringilla cyanomelas*, Gm. Syst. Nat. i. p. 924. *Certhia spiza*, var., Gm. Syst. Nat. i. p. 476 (♀). *Nectarinia bicolor,* Beckl. Nouv. Mém. Soc. Mosc. i. p. 378. *Cœreba cærulea,* Max. Beitr. ii. p. 766. *Dacnis cyanater,* Less. Tr. d'Orn. p. 458. *Dacnis cyanomelas,* Burm. Syst. Ueb. iii. p. 153. *Dacnis cyanomelas* et *Dacnis cayana,* Reichenb. Handb. pp. 226, 227. *Dacnis cayana,* Strickl. Contr. Orn. 1851, p. 15; Sclater, Contr. Orn. 1851, p. 106, et P.Z.S. 1854, pp. 110, 252, 1855, p. 137, 1857, p. 263, et 1858, p. 452; Bp. Consp. p. 400.

♂. Viridescenti-cærulea: fronte, gula, dorso medio, alis et cauda nigris: alis cæruleo limbatis: rostro carneo, pedibus pallide carneis: long. tota 4·2, alæ 2·2, caudæ 1·6, poll. et dec. Angl.

♀. Viridis; pileo cærulescente; gula cinerea.

Hab. Widely diffused from New Granada and Venezuela, through Cayenne and the whole Amazon valley, into southern Brazil: vicinity of Ega, Upper Amazon (*Bates*): received in Bogota collections: Bolivian Amazon (*D'Orb.*): Chamicurros, on the Huallaga (*Hauxwell*).

Obs. D'Orbigny met with this species in the province of Yungas, in the environs of Sta. Cruz de la Sierra, and in the countries inhabited by the Yuracares and Guarayo Indians in Bolivia.

2. DACNIS CŒREBICOLOR.

Dacnis cœrebicolor, Sclater, Contr. Orn. 1851, p. 106, et P.Z.S. 1854, p. 252, et 1855, p. 137. *Arbelorhina cœrebicolor,* Reichenb. Handb. p. 236.

♂. Purpureo-cærulea: fronte, gula, dorso medio, alis et cauda nigris: alis dorsi colore limbatis: rostro et pedibus carneis: long. tota 3·5, alæ 2·8, caudæ 1·9.

♀. Viridis: mento cinereo: pileo cæruleo.

Hab. Only seen in collections received from Bogota.

Obs. The distribution of colours in this species is exactly the same as in *D. cayana*; but its purple-blue coloration renders it distinguishable *primo visu.*

3. DACNIS NIGRIPES.

Dacnis nigripes, v. Pelzeln, Sitzungsb. Acad. Wien, 1856, xx. p. 157; Sclater, P. Z. S. 1857, p. 263.

♂. Thalassino-cærulea: gula, fronte, interscapulio, alis et cauda nigris, his cæruleo limbatis: rostro et pedibus nigris: long. tota 4·4, alæ 2·3, caudæ 1·5.

♀. Sordide olivacea: uropygio cærulescente: subtus fulva.

Hab. S.E. Brazil; vicinity of Nuovo Friborgo (*Beske*).

Obs. Easily distinguishable by its black bill and feet and short tail, though much resembling *D. cayana.*

4. DACNIS MELANOTIS.

Sylvia cayana γ, Lath. Ind. Orn. p. 546. *Sylvia cayana,* Vieill. Gal. Ois. pl. 165. *Dacnis cayana,* D'Orb. et Lafr. Mag. de Zool. 1837, p. 20; Tsch. Faun. Per. p. 37; Cab. in Schomb. Guian. iii. p. 675; Bp. Consp. p. 400; Burm. Syst. Ueb. iii. p. 153. *Dacnis angelica,* Sclater, Contr. Orn. 1851, p. 107, et P. Z. S. 1854, pp. 110, 252, et 1857, p. 263. *Dacnis melanotis,* Strickl. Contr. Orn. 1851, p. 16.

♂. Thalassino-cyanea: fronte lata, lateribus capitis et cervicis, interscapulio, alis et cauda nigris: ventre medio et crisso albis: rostro et pedibus nigris: long. tota 3·2, alæ 2·2, caudæ 1·5.

♀. Sordide olivacescenti-brunnea, subtus dilutior.

Hab. Cayenne and valley of Amazon, southwards to S.E. Brazil; wood-region of Peru (*Tschudi*); once near Lagoa Santa, in S.E. Brazil (*Burmeister*); forests of the Yuracares Indians, Bolivia (*D'Orb.*); River Ucayali (*Hauxwell*).

5. DACNIS ANGELICA.

Dacnis angelica, De Filippi, Cat. Mus. Mediol. (1840); Bp. Consp. p. 400; Sclater, P. Z. S. 1855, p. 137. *Dacnis archangelica,* Bp. Cat. Ois. de Cayenne, p. 7.

Præcedenti simillima, sed colore cæruleo lætiore!

Hab. New Granada.

Obs. This is merely a local variety of the former species; but as it may be easily recognized on comparison, I allow it to stand as if it were specifically distinct.

6. DACNIS VENUSTA. (Plate VII.)

Dacnis venusta, Lawrence, Ann. Lyc. N. H. New York, Feb. 10, 1862.

♂. Nigerrima: capite postico, lateribus cervicis, dorsi parte media, et dorso postico toto cum scapularibus nitide cæruleis: tibiis coccineis: rostro et pedibus nigris: long. tota 4·5, alæ 2·6, caudæ 1·7.

♀. Sordide viridescens, uropygio cærulescente: subtus ochracea, gula cinerascente.

Hab. Isthmus of Panana.

7. Dacnis egregia.

Dacnis egregia, Sclater, P. Z. S. 1854, p. 251, 1855, p. 137, et 1860, pp. 65, 292; Cat. Am. Birds, pl. 7.

♂. Thalassino-cærulea: fronte et fascia per oculos lata cum capitis lateribus, nucha et dorso superiore, alis caudaque nigris: scapularibus et secundariorum marginibus externis dorso concoloribus: subalaribus et ventre medio, crisso et tibiis flavissimis: long. tota 4·3, alæ 2·5, caudæ 1·5.

♀. Fuscescenti-olivacea, abdomine flavo.

Hab. Interior of New Granada (received in Bogota collections): Western Ecuador, Nanegal and Esmeraldas (*Fraser*).

Obs. Mr. Fraser's examples from Ecuador have more greenish-blue colouring than the Bogota skins.

8. Dacnis flaviventris.

Dacnis flaviventris, D'Orb. et Lafr. Mag. de Zool. 1837, p. 31; D'Orb. Voy. Ois. p. 220; Bp. Consp. p. 400; Sclater, Contr. Orn. 1851, pp. 108–114, et P. Z. S. 1854, p. 252, et 1857, p. 263. *Conirostrum flaviventre,* Reichenb. Handb. p. 229.

♂. Aureo-flava: pileo læte viridi: fronte, capitis lateribus, dorso superiore, alis et cauda cum gula media nigris: rostro et pedibus nigris: long. tota 4·5, alæ 2·5, caudæ 1·5.

♀ ignota.

Hab. Upper Amazon, Rio Jauari, 40 miles above Tabatinga (*Bates*): forests of the Yuracares, at the eastern foot of the Bolivian Andes (*D'Orb.*).

9. Dacnis pulcherrima.

Dacnis pulcherrima, Sclater, Rev. Zool. 1853, p. 479, et P. Z. S. 1854, p. 252, et 1855, pp. 84, 137; Cat. Am. Birds, pl. 8. *Nemosia torquata,* DuBus, Bull. Acad. Brux. xxii. p. 155 (1855).

♂. Capite undique cum gula, alis et cauda nigris, alis extus cæruleo limbatis: semitorque collari postico flavo: dorso superiore medio, inferiore toto cum reliquo corpore subtus

pallide aurescenti-viridi, ventre medio albicantiore: rostro nigro, basi mand. inf. pallida, pedibus corylinis.

♀ ignota.

Hab. Interior of New Granada (received in Bogota collections).

10. DACNIS PLUMBEA.

Sylvia plumbea, Lath. Ind. Orn. ii. p. 553. *Dacnis plumbea*, Tsch. Faun. Per. p. 236; Sclater, Contr. Orn. 1852, p. 102, et P. Z. S. 1854, p. 252; Reichenb. Handb. p. 228; Burm. Syst. Ueb. iii. p. 155.

♂. Cærulescenti-plumbea: subtus fuscescenti-cinerea, ventre medio albescentiore: rostro et pedibus carneis: long. tota 4·7, alæ 2·4, caudæ 1·4.

♀. Mari similis, sed coloribus dilutioribus, et subtus magis ochracescens.

Hab. S.E. Brazil (*Burm.*); and extending through the Amazon valley into Guiana and Venezuela: eastern wood-region of Peru (*Tschudi*).

11. DACNIS LEUCOGENYS.

Dacnis leucogenys, Lafr. Rev. Zool. 1852, p. 470.

♂. Plumbeo-cærulea, subtus dilutior, ventre albescente: pileo nigro, macula auriculari alba: crisso castaneo: rostro et pedibus corylinis: long. tota 3·6, alæ 2·2, caudæ 1·5.

♀ ignota.

Hab. New Granada; occasionally received in Bogota collections.

12. DACNIS SPECIOSA.

Sylvia speciosa, Max. Beitr. iii. p. 706. *Dacnis speciosa*, Sclater, Contr. Orn. 1852, p. 101, et P. Z. S. 1854, p. 252; Reichenb. Handb. p. 228. *Dacnis analis*, Lafr. et D'Orb. Mag. de Zool. 1837, p. 21. *Sylvicola speciosa* et *Dacnis analis*, Burm. Syst. Ueb. iii. pp. 117, 155.

♂. Plumbescenti-cærulea, subtus valde dilutior, ventre medio albescente: crisso castaneo.

♀ mari similis?

Hab. British Guinana and Amazon valley to Bolivia: Chiquitos (*D'Orb.*): S.E. Brazil (*Max.*).

XXVII.—*Notes on the Fruit-Pigeons of the Genus* Treron.

By Alfred R. Wallace.

In the 'Nederlandsch Tijdschrift voor de Dierkunde,' 1863, p. 73, is a paper by Prof. Schlegel on some species of *Treron,* in which he declares that "*most naturalists are ignorant of the laws which rule the coloration of the plumage in these birds,*" and "*that even in the work of Bonaparte one finds constantly repeated the very common error, that the females have constantly a different plumage from that of the males.*" And further on he states that, in all the species allied to *Treron aromatica* and *T. vernans,* "*as a general rule, the perfect plumage of the adult females does not differ from that of the adult males.*"

Having myself collected some hundreds of specimens of *Treron* of almost all the species inhabiting the Malay Archipelago, and having found, by personal dissection of the specimens, that in almost all the species the sexes differ greatly, I was of course very much surprised at the above statements. On looking over my specimens, however, I see no reason to alter my opinion. Of *Treron capellei,* Bp., *T. aromatica,* Gm., *T. nipalensis,* Bl., *T. griseicauda,* Gr., *T. pulverulenta,* Wall., *T. fulvicollis,* Wag., *T. olax,* Temm., and *T. vernans,* Gm., I have adult females strikingly different in coloration from the males. I believe any ornithologist by a mere examination of the specimens would be satisfied that such is the case; but I have the further evidence of having in many cases found large masses of ova in these female birds, and also in the fact that they were in many cases shot from the same flock with the males, that they occurred in nearly equal quantities, and that in a large series of female specimens the characters are as uniform and constant as in the males, which certainly would not be the case were they immature birds, or in the act of changing their plumage. I am therefore forced to the conclusion that, the Malayan Collections in the Leyden Museum having been generally formed through the agency of native bird-skinners (most of whom I have myself employed as hunters), the sexes of the specimens have not been accurately determined.

I will now make a few observations on the species mentioned by Prof. Schlegel, and point out one or two corrections of their synonymy.

TRERON AROMATICA, Gm. Prof. Schlegel says, "*This species comes from the Philippine Islands, and not from Amboyna as Brisson has indicated,*" and gives as synonymous *T. axillaris*, Gr. & Bp. In my paper on the "Birds of Bouru" (Proc. Zool. Soc. 1863, p. 33) I have established the accuracy of Brisson's locality, and after a century of confusion set at rest the question of what is the true *T. aromatica*, by the discovery in the island of Bouru of a bird agreeing in the most minute particulars with Brisson's description of his "*Columba viridis amboinensis.*" The hunters I employed in Bouru were natives of Amboyna, and they assured me the bird was also found there, though only in the districts remote from the town. It is very curious that this species, one of the earliest described of its genus, and inhabiting a small island which is the European emporium of the far East, should never have been brought to Europe since the time of Brisson; for I presume that if a specimen existed in any museum, its agreement with the accurate description of that author would have been before this pointed out. It is a most beautiful and delicately coloured species, and is further interesting as marking the extreme eastern range of the genus, which is essentially characteristic of the Indian region. The Philippine bird, therefore, will retain the name of *Treron axillaris*, G. R. Gray.

TRERON GRISEICAUDA, G. R. Gray. Prof. Schlegel appears not to have seen the true *T. griseicauda*, which I obtained in Celebes and the Sula Islands, and have compared with the type specimen in the British Museum. (See Proc. Zool. Soc. 1862, p. 344.) I have specimens of a bird from Java, agreeing with those of Prof. Schlegel from the same island, and for which I propose the name of TRERON PULVERULENTA.

This species differs from *T. griseicauda* in its smaller size, less brilliant colours on both upper and under surfaces, yellower bill, in the black band on the tail being very ashy and ill-defined, and the orange-brown spot above the shoulder almost obsolete. The rich brown colour of the back and wing-coverts extends less over the wings, and it, as well as the whole upper surface, has a powdery-grey appearance (as noticed by Prof. Schlegel), from which I have derived the name proposed for the species. It is undoubtedly very closely allied to *T. griseicauda*, and might well be treated as a slight geographical variety of that species; but in the present difficult genus, where forms very different in structure are often deceptively alike in plumage, it seems advisable to define and name every constant form, especially where it possesses a distinct geographical habitat.

TRERON NASICA, Schlegel. I have a male specimen of this curious bird from Sumatra, collected by myself. It agrees exactly with the description given, except that it is rather larger, instead of smaller, than the last-mentioned bird from Java. This will come in the subgenus *Toria* of Hodgson, agreeing with *T. nipalensis* in the frontal plumes advancing to the horny part of the bill. *T. curvirostra*, Gm., is probably a female or immature specimen of this bird.

TRERON FULVICOLLIS, Wagl. I obtained both sexes of this species in Sumatra, which locality must be added to those mentioned by Prof. Schlegel.

TRERON OLAX, Temm. Add Malacca as a locality for this species.

TRERON VERNANS, Gm. This species extends to Penang, from which island my specimen has the head dark slaty, and the lilac of the neck very narrow above. In the Macassar form the head is paler, the forehead and throat greenish, and the pale lilac of the neck is as broad above as beneath. A specimen from Borneo appears somewhat intermediate, though more nearly approaching that from Penang. More specimens from each locality are therefore required before we can determine whether these differences are sufficiently constant to deserve specific appellations.

XXVIII.—*A Fifth additional List of Birds from Natal.*

By J. H. GURNEY, M.P., F.Z.S.*

(Plates VIII. & IX.)

THE following species have (with one exception) been forwarded

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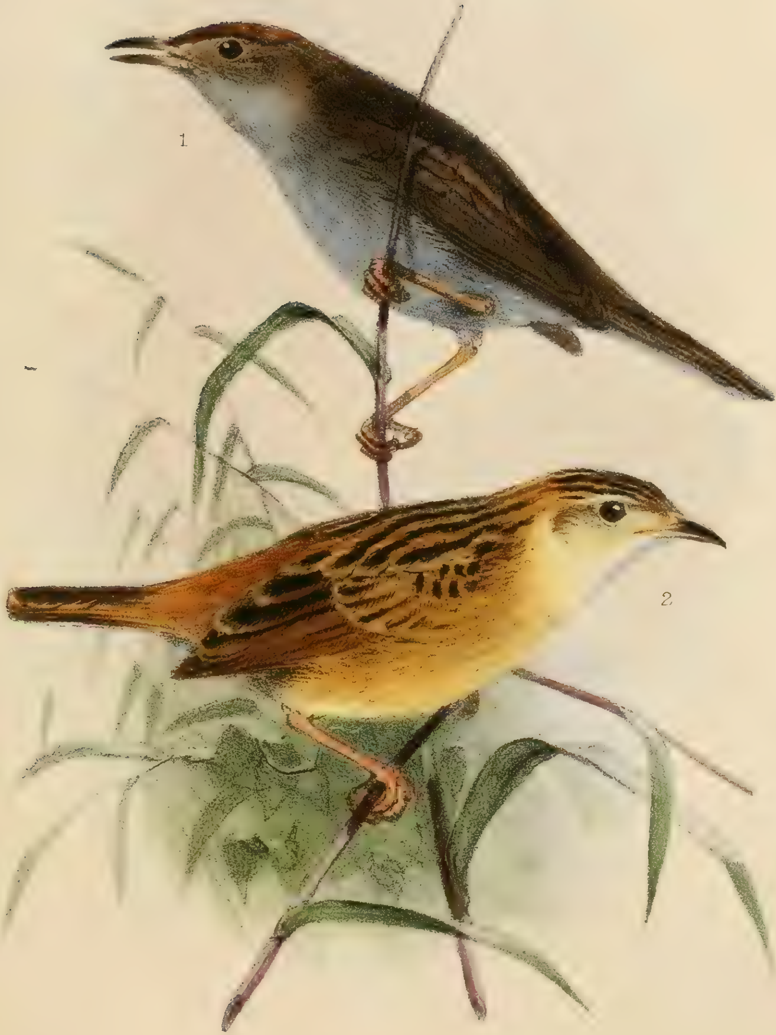
* See 'Ibis,' 1859, p. 234; 1860, p. 203; 1861, p. 128; 1862, pp. 25, 149.

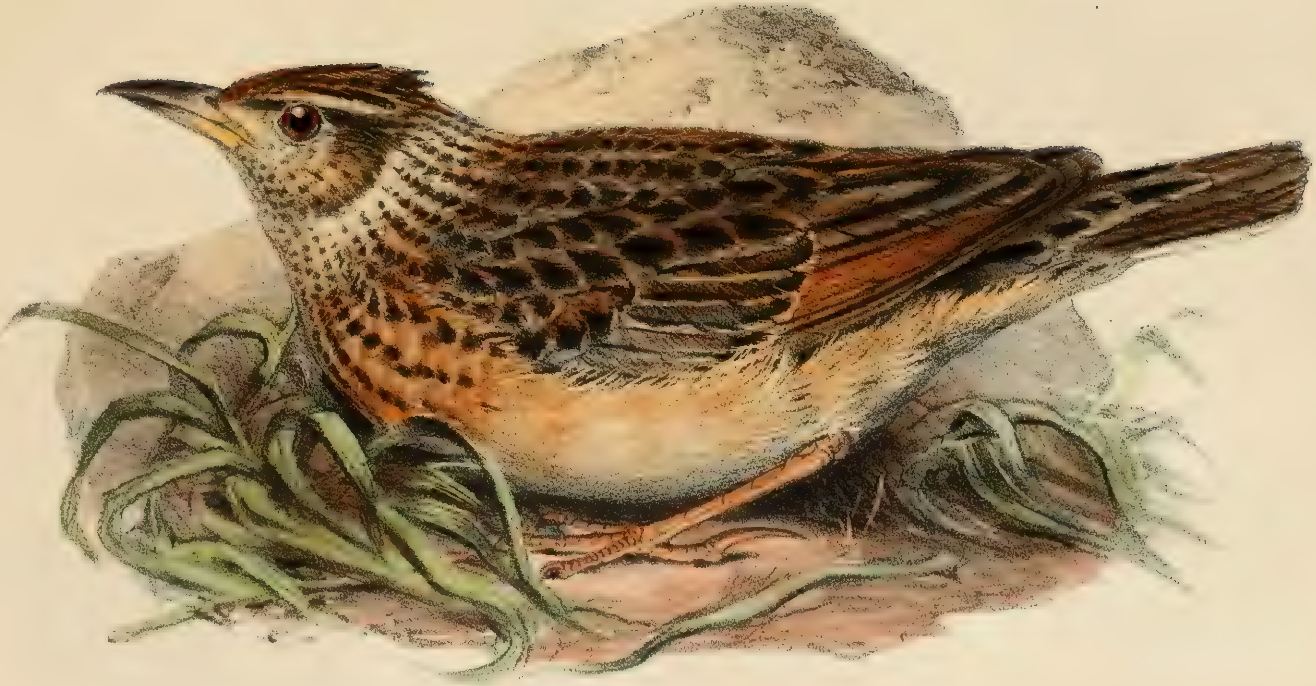


f, del et lith.

M & N Hanhart, Im

1. CAMAROPTERA NATALENSIS.

2. CISTICOLA AYRESII.



J. Wolf, del et lith.

M & N Hanhart Impt

MEGALOPHONUS ROSTRATUS.

to me from Port Natal by my esteemed and indefatigable correspondent, Mr. Thomas Ayres.

In identifying many of the smaller species in the following list, I have had recourse to the able and most obliging assistance of my kind friend, Dr. G. Hartlaub of Bremen, which I have great pleasure in here acknowledging.

The species now enumerated, which have not been included in my previous lists of birds from Natal, are numbered consecutively to those in my last paper (see 'Ibis,' 1862, p. 149), allowing for an error which is there referred to, by which one species was inadvertently twice enumerated, and to rectify which the concluding number of the last list is now repeated. The observations appended are communicated by Mr. Ayres, excepting those in brackets, with my initials attached.

187 (B). BUBO LACTEUS, Temm. Sultan Owl.

[A fine specimen of this large Owl (to which Lesson gave the expressive specific synonym of "*sultaneus*") was sent from Natal in the collection of the birds of that colony recently exhibited at the International Exhibition. A specimen now living in the collection of the Zoological Society of London enables me to give the colour of the irides and cere—the former being very dark brown, the latter bluish grey. A remarkable feature of this Owl is its large rose-coloured upper eyelid, by which the eye is usually partially covered during the hours of daylight.—J. H. G.]

188. CYPSELUS APUS (Linn.). British Swift.

Female. Iris dark brown; bill black; feet pale, tinged with black.

These birds may be seen here, more or less, all the year round, but are more plentiful during the summer. They are generally in numbers; their flight is exceedingly rapid, and mostly at a considerable height; their food consists of small insects.

[The specimen sent appears to be a young bird, and identical with those found in this country.—J. H. G.]

189. HIRUNDO RUSTICA, Linn. British House-Swallow.

Male. Iris dark hazel; bill black; tarsi and feet brown.

These Swallows arrive in November in great numbers, and congregate and leave again in March and April; they are fond of alighting to rest on the outer twigs of bushes, stems of tall grass, and trees, especially at the time of their departure, when many hundreds assemble together. Like most other Swallows, they are almost constantly on the wing.

[The specimen sent appears to be adult, and identical with the Swallow of Great Britain, though perhaps slightly more rufescent on the abdomen. Considering the occurrence of this and of the preceding species in Natal to be a very interesting circumstance, I have submitted both specimens to Dr. Hartlaub, who agrees with me in the above identifications.—J. H. G.]

190. HIRUNDO CUCULLATA, Bodd. Hooded Swallow.

Female. Iris dark umber; bill dark brown; tarsi and feet dusky brown.

These birds arrive in October or November, and leave again in March or April; they are fond of building under the eaves of houses, constructing a chamber of about 8 inches in diameter, with a long horizontal neck to it; the nest is lined with fine grass, feathers, and down. When flying about in search of food, they constantly utter a short note, somewhat resembling the "*chisick*" of the Sparrow, but rather modulated.

191. HIRUNDO ATROCÆRULEA, Sundev. Little Blue-black Swallow.

Male. Iris brown; bill black; tarsi and feet brown.

These are the most uncommon of the Swallows here; they frequent the open country, and appear to be solitary in their habits, skimming with rapidity and ease over the long grassy hills. I have never seen them take a rest; but on and on they go, apparently without ceasing.

They are, I think, here all the year round; at all events, I have seen them in the following months, viz. March, April, August, November, and December.

192. ATTICORA HOLOMELAS (Sundev.). Little Green-black Martin.

Male and *female.* Iris very dark brown; bill black; nostrils large and oval; tarsi and feet dusky pale.

This species is common here all the year round, but I think not immediately on the coast.

They are generally to be seen two or three together, searching for insects, about the bushy valleys, and occasionally, though not often, alighting to rest on some dead bough.

Their food consists of minute beetles and other insects.

193. CATRISCUS APICALIS, Caban. Fan-tailed Catriscus.

Male. Iris light hazel; upper mandible of bill very dark ashy brown; under mandible light ash-colour; nostrils large and oval; tarsi and feet palish brown.

These Warblers, which are not so common as some other reed-birds, are found amongst the rank grass and rushes that grow in swampy places.

When they have been once flushed, it is a difficult matter to put them up a second time, as they creep away with great swiftness amongst the stems of grass. Their notes are rather loud and somewhat harsh; their flight is weak, being seldom sustained for more than fifty yards.

Their food appears to consist entirely of small insects.

194. SPHENŒACUS AFRICANUS (Gmel.). Flute-voiced Sphenœacus.

Male. Iris dark hazel; the upper mandible of the bill blackish brown, except the margin, which, with the under mandible, is ash-coloured; tarsi and feet light ash-colour; nostrils oval and slightly tumid.

This is also not a very common Warbler; it frequents much the same cover as the preceding species, but has perhaps a rather greater partiality to bushy underwood on the edges of the dense bush; its flight is very weak, and it is difficult to drive it from its hiding-places; its food consists of insects.

195. DRYMŒCA CURVIROSTRIS (Sundev.)? Curved-billed Drymœca.

Male. Iris light brown; bill horny; nostrils linear; tarsi and feet pale.

The female appears to be smaller than the male, and has the bill pale, the ridge only being dark brown. In the immature birds also the bill is pale; and the irides vary somewhat in colour according to age, as in fact they do in all the *Drymœcæ*.

These birds frequent long grass in the more open country; their flight is comparatively strong; during the breeding-season they are fond of mounting high in the air, uttering at the same time a very loud and harsh chucking note; their food appears to consist of crickets and other good-sized insects.

[Dr. Hartlaub, to whom I submitted the specimens here referred to, remarks, "In spite of some difference in size and colour, I think that the two strong-billed *Drymœcæ* are ♂ and ♀ of the same species, very probably *D. curvirostris* of Sundevall;" his description coincides (not too well) with the female specimen.—J. H. G.]

196. Drymœca natalensis, Smith. Natal Drymœca.

[Mr. Ayres sends a single specimen of this bird, but does not distinguish it as distinct from the succeeding species, from which, however, it, without doubt, specifically differs. Dr. Hartlaub remarks that the specimen sent is a "very small one." —J. H. G.]

197. Drymœca levaillantii, Smith. Le Vaillant's Drymœca.

This species frequents long coarse grass in the valleys and on the hill-sides; its flight is tolerably strong, and it does not attempt to hide when disturbed, but at once takes wing.

198. Drymœca aberrans, Smith. Aberrant Drymœca.

Male. Iris bright hazel; upper mandible of bill light brown; under mandible pale; nostrils large and oval; tarsi and feet pale.

These Warblers are generally to be found amongst the high grass, which forms a dense cover on the edges of the woods. When disturbed, they flit and hop about the twigs and boughs of the adjacent bushes, uttering at the same time a weeping note, which much resembles the distant bleating of a goat; they seem to be particularly fond of the eggs of moths and small insects. Their flight is but weak.

199. Drymœca pallida, Smith. Pallid Drymœca.

[Mr. Ayres does not furnish any particulars respecting this species.—J. H. G.]

200. Cisticola ayresii, Hartl., sp. nov. (Pl. VIII. fig. 2.) Ayres's Cisticole.

Male and *female*. Iris light brown; upper mandible dark hazel; under mandible pale; nostrils rather large and oval; tarsi and feet pale.

These birds are common in the open country, frequenting much shorter grass than that frequented by *Drymœca curvirostris*. Their nest is very beautifully constructed, amongst the fine stalks of grass, which are drawn together towards the top, a sort of purse or bag being made of the finest and whitest down and spiders' webs and attached at the sides to the grass which surrounds it, the opening being on the top. On any intruder approaching the nest, the birds generally mount overhead with a flitting eccentric flight, watching with anxiety the fate of their domicile. Their flight is tolerably strong; and when they have been disturbed once or twice, it is sometimes a difficult matter to get within shot of them.

[Dr. Hartlaub writes to me with reference to this species:—"The little *Cisticola* is new; it is distinguished from the *Cisticola* of Southern Europe, not only by much higher colours, but (what is much more important) considerably larger feet (the tarsi being shorter).

"The female of *Cisticola europæa* has never such a bright tint of yellow on the under part.

"As there is no doubt as to its being new, I have chosen for it the name of *ayresii*."

This species, to which Dr. Hartlaub has appropriately affixed the name of my friend Mr. Ayres, is figured in the accompanying plate from a female specimen in which the yellowish abdominal tint is more strongly marked than it is in another female which Mr. Ayres also transmitted, and which closely resembles the male bird. Dr. Hartlaub has favoured me with the following diagnosis of *Cisticola ayresii*:—

"Simillima *Cisticolæ europeæ* ex Hispania, sed diversa coloribus omnino lætioribus, uropygio distinctius rufo, pedibus majoribus, tarsis paullo brevioribus.—Long. rostr. $4\frac{1}{3}'''$. Al. $1''$. Tarsi $8'''$. Dig. med. $6'''$. (♂.)

Fœm. Subtus flavo-lactea, uropygio læte vulpino-rufo."—J. H. G.]

201. Camaroptera natalensis, Hartl. sp. nov. (Pl. VIII. fig. 1.) Natal Camaroptera.

Male and *female.* Iris light yellowish brown; upper mandible of the bill light brown; under mandible pale; nostril large and long, oval, nearly linear; tarsi and feet pale.

These birds are plentiful, frequenting rough weeds and grass; their flight is tolerably strong; their food consists of minute insects, eggs of moths, &c.

During the summer months they may frequently be seen perched on the top of a low tree or bush, when they utter a monotonous weeping note for a length of time.

[This curious little bird is pronounced by Dr. Hartlaub to belong to an undescribed species, to which he proposes to give the name of *natalensis.*

The specimen represented in the accompanying plate is a male, the colours in the female only differing in being slightly paler.

I am indebted to the kindness of Dr. Hartlaub for the following summary of the specific characters of *Camaroptera natalensis*:—

"Supra fusco-cinerascens, alis et cauda obsolete fuscis, subtus pallidius cinerascens, abdomine medio, crisso, subcaudalibus et subalaribus albidis, pileo obsolete rufo: cruribus pallide rufescentibus: pedibus et rostro dilute brunneis; mandibula basali pallidiore.—Long. $3\frac{1}{2}''$. Rostr. a fr. $4\frac{1}{2}'''$. Al. $1''\,9'''$. Caud. $1''\,5'''$. Tarsi $8'''$. (♂.) *Fœm.* vix diversa.—J. H. G.]

202. Megalophonus rostratus, Hartl. sp. nov. (Pl. IX.) Long-billed Megalophonus.

Male. Iris hazel; upper mandible of bill blackish brown, except the margins, which, with the under mandible, are pale; nostrils small, almost round and tumid; tarsi and feet pale.

This Lark is a stout, thickset bird, and runs with great swiftness on the ground amongst the grass, so that even with a good dog it is sometimes a difficult matter to flush it. From the frequently worn appearance of their claws, I fancy they partially obtain their food by scratching the earth, after the manner of the *Rasores*.

If undisturbed when rising, their flight is generally fluttering and noisy; they also sometimes (but not always) utter a few short notes as they rise. They are fond of sunning themselves on the top of any convenient low bush, fluttering their wings every few seconds, and making a sort of rattling sound.

[In reference to this species, Dr. Hartlaub remarks, "This *Megalophonus* is very nearly allied to *M. planicola* of Lichtenstein, and to my *M. occidentalis*, but differs by the uncommonly lengthened beak, and by the wings and tarsi being much shorter. I cannot find a name for it, and think it must be undescribed.

The accompanying figure represents a male specimen of this *Megalophonus*, to which Dr. Hartlaub has given the specific name of "*rostratus*."

Dr. Hartlaub has also favoured me with the following definition of the specific peculiarities of this species:—

"Supra fulvo-brunnescens nigricante maculatus, nucha pallidius rufescente, maculis nigris substriata; pileo rufo, nigro maculatim striato: subtus fulvus, juguli maculis longitudinalibus nigris: mento albido, immaculato: subalaribus læte rufis, primariis omnibus in dimidio majore basali rufis, secundariis minus rufis, rectricibus fuscis, harum externæ pogonio externo albido: pedibus magnis, rubentibus: rostro fusco-nigricante, mandibula basali pallidiore.—Long. 6½″. Rostr. a fr. 8‴. Al. 3½″. Caud. 2″ 3‴. Tarsi 12½‴.

Affinis *M. planicolæ* et *M. occidentali*, sed rostri longitudine et forma aliterque diversus."—J. H. G.]

203. Anthus brachyurus, Sundev. Short-tailed Pipit.

Male and *female*. Iris dark hazel; upper mandible of bill dark brown; under mandible pale ashy colour; nostrils linear; tarsi and feet pale.

This species is only plentiful during the summer months; it is quite a terrestrial bird, never, to my knowledge, alighting on any twig or stem of grass, but always on the ground. The birds generally rise from the grass close to one's feet; and it is no easy matter to shoot them, as their flight is both strong and very eccentric.

They build their nests (I am tolerably certain) similarly to the Lark's, on the ground, with a few loose dry leaves of grass; they are generally either single or in pairs.

204. THAMNOBIA PTYMATURA (Vieill.). Black Chat.

[Mr. Ayres gives no particulars of the habits of this species. —J. H. G.]

205. BESSONORNIS PHŒNICURUS (Gmel.). Bush Chat.

This species frequents the dense bush and underwood, searching amongst the dry leaves for its food. In habits it somewhat resembles the English Robin, carrying and moving its tail in much the same manner. It is not particularly common.

206. BUPHAGA ERYTHRORHYNCA, Stanley. Red-billed Buphaga.

Male and *female*. Iris bright orange; eyelids (which are much broadened) very light yellow; bill crimson; nostrils small, round, and slightly tumid; almost immediately after death, both the irides and eyelids deepen considerably in colour. These are amongst the useful birds of Natal; their food consists entirely of Acari or ticks, which they pick from the cattle. They run and climb all over an ox, much as a Woodpecker would about the stem of a tree. The cattle, for the most part, much enjoy the operation, and may be seen with tail partially extended, standing perfectly motionless whilst the birds are picking amongst the crevices of their ears, where the ticks generally adhere in the greatest numbers.

These birds are mostly seen in small companies, varying from three to ten; their flight is rather heavy; their notes are harsh, but not loud. The head is carried with the bill pointed upwards.

207. ZOSTEROPS VIRENS (Sundev.). Green Zosterops.

Male. Iris light brown; bill black; tarsi and feet ash-colour.

These birds are gregarious, and very plentiful in the spring of the year (September and October). They do considerable damage to soft fruits, such as the loquat and mulberry; but also do much good in clearing the trees of insects, climbing and hunting amongst the buds and leaves in search of them. They almost constantly utter a loud, monotonous, weeping note, which somewhat resembles that of the *Nectariniæ*, and especially of *Nectarinia amethystina.*

208. CEBLEPYRIS LEVAILLANTII (Temm.). Le Vaillant's Caterpillar-eater.

I am not much acquainted with the habits of this bird; it is, I think, only here during the summer months, and inhabits the dense bush on the coast range.

209. PLOCEUS MARIQUENSIS (Smith). Capricorn Weaver-bird.

These birds are gregarious, and are troublesome to all cereal crops, as they live almost entirely upon grain and grass-seeds. They build their nests invariably amongst reeds which grow in swamps and shallow water. Whilst building, they have a curious habit of hanging by their feet from their nests, and, with wings extended, drooping, and fluttering, they sway themselves slowly from side to side; this has a very pretty effect when a number of nests are close together, and all in about the same stage of building.

210. ORTYGOSPIZA POLYZONA (Temm.). Little Bar-breasted Finch.

Male. Iris light reddish hazel; bill crimson; tarsi and feet very light brown.

These Finches are only found here during the autumn and winter months, from May to August or thereabouts; they are generally, but not invariably, gregarious; they seem always to settle on the ground amongst grass or weeds, and not on the stalks of the grass or on bushes; their flight is rapid; on rising, they utter a chattering note with a peculiar metallic sound. The seeds of grass and weeds form, I think, their entire diet.

211. GLAREOLA TORQUATA (Meyer). Austrian Pratincole.

[Mr. Ayres transmits, in this collection, an adult specimen of this Pratincole, procured from the colony of Natal, but not by himself.—J. H. G.]

212. TOTANUS STAGNATILIS (Bechst.). Marsh Sandpiper.

Male. Iris very dark brown; bill greenish black; nostrils long oval; tarsi and feet yellowish green.

The only specimens I have seen of these graceful birds have been at the edges of small pools on the roads some ten or twelve miles from the coast.

If disturbed, they most frequently take a large circle and return to the same pool, just as a Snipe would.

In the stomach of the specimen sent were numerous pebbles.

213. Terekia cinerea (Gmel.). Terek Sandpiper.

The specimen sent was shot from a flock of four or five, amongst the mangroves in the bay; they are scarce birds here.

214. Rhynchæa capensis (Linn.). African Painted Snipe.

Iris greyish brown; nostrils small; and linear tarsi and feet greenish ash-colour.

These Snipes are very scarce in Natal. The specimen sent was shot in a swamp near the mouth of the Umlaas; its stomach contained the remains of small insects.

[The *Rhynchæa* of South Africa appears to me, on a comparison of specimens, to be identical with that of Egypt, of India, and of China.—J. H. G.]

215. Ardea bubulcus, Sav. Buff-backed Heron.

Male and *female*. Iris very light yellow. Eye small. Bill light yellow; nostrils linear; tarsi and feet pale yellow.

The flats near the mouth of the River Umlaas are the only localities where I have seen these birds.

They are gregarious in their habits, roosting by night amongst the branches of trees which overhang the small lakes that are plentiful in that part of the country. They appear to feed entirely on ticks (*Acari*), which they pick from the cattle as they are feeding, walking alongside of them and every now and then taking one off. They are wary birds, like most of the Herons, and not easy of approach. The farmers in the neighbourhood have also, of course, great objection to such useful birds being shot.

216. Ardetta podiceps (Bp.). Short-winged little Bittern.

Male adult. Iris greenish yellow.

Female. Iris light reddish yellow.

These birds are solitary: two of those sent were procured at different times on a small stream about ten miles from the coast; their stomachs were crammed with locusts, grasshoppers, and other insects.

On being disturbed, they fly but a few yards, and then alight again.

[The differences between this species and its near ally, *Ardetta minuta*, which also occurs at Natal, are well defined in Dr. Hartlaub's work on the Ornithology of Madagascar, p. 75.—J. H. G.]

217. Crex pratensis (Bechst.). Corn-Crake.

Male and *female*. Iris light greyish brown; bill pale, darker on the ridge; tarsi and feet dusky pale; nostrils linear.

These birds are scarce on the coast, but become more plentiful inland. They are only found here during the summer months. Having been once flushed, it is a difficult matter to put them up a second time out of the long grass; for, besides running with great swiftness, they have a curious method of evading the dogs by leaping with closed wings and compressed feathers over the long grass some three or four yards, and then, running a short distance, they leap again. The scent being thus broken, they generally evade the most keen-scented dogs; and so quickly are these strange leaps made, that it is only by mere chance that the birds are seen.

The flesh of these birds is exceedingly delicate. Their food consists almost entirely of insects. Their flight is weak, and seldom sustained for more than fifty yards.

[The Corn-Crakes sent by Mr. Ayres appear to be identical with English specimens.—J. H. G.]

The following additional notes have been communicated to me by Mr. Ayres respecting two of the species previously enumerated.

Spizaëtus coronatus (Linn.). Crowned Eagle.

I very nearly shot a fine specimen of *Spizaëtus coronatus* a short time since. Early one morning it made a dash at one of my hen Turkeys, and very nearly succeeded in catching it; but the Turkey saw the Eagle just in time to slip from under him, and got away with the loss only of the whole of the tail and the greater portion of the rump-feathers, which remained in the

Eagle's grasp—he, on the ground, staring about with apparently the utmost astonishment at his failure. I got a long shot at the Eagle, and wounded him; but he succeeded in making his escape.

PLOTUS LEVAILLANTII (Temm.). Le Vaillant's Darter.

Males. Iris red. Eye small; bill dark yellowish green; nostrils entirely wanting, or, if they are there, I cannot find them; tarsi and feet blackish yellow. A small pouch at the chin.

These curious birds swim so low in the water that scarcely a bit of their back is to be seen, and indeed hardly anything but their long snake-like neck and head, which, as they swim, are moved gracefully backwards and forwards.

When in this position, the bird might easily be taken, by those unacquainted with it, for a water-snake. This species lives entirely on fish, and is a most expert diver. It is particularly fond, on hot days, of sunning itself, with wings outstretched, on some bunch of rushes or log of wood. Its flight is rather laboured, yet the bird is able to sustain it for a length of time. On being disturbed, it frequently circles round and round the waters which it inhabits, rising higher and higher at each turn, when, having attained a very considerable height, far out of gun-shot, it will go straight away to some other distant pool.

[The two specimens of this bird sent to me by Mr. Ayres (both of which appear to be fully adult) exhibit the following remarkable discrepancies in size and measurement:—

	Total length in inches.	Wing from carpal joint.	Bill from the gape.	Tarsus.	Tail.
Specimen A. .	37½	13¾	4¼	1¾	11½
Specimen B. .	29	11¾	3¾	1½	9½

With reference to the sex of these two examples, Mr. Ayres writes to me as follows:—

"The larger bird was preserved by an experienced hand, and was marked male; the smaller one I shot and skinned myself, and am certain was a male."—J. H. G.]

XXIX. *Notes of a Second Visit to Madagascar.*

By Edward Newton, M.A., C.M.Z.S.

I have much pleasure in being able to forward the bird-notes of a second visit to Madagascar. I left Mauritius on the 30th August, 1862, on board of H.M.S.S. 'Gorgon;' but light winds prevented our reaching Tamatave before the 5th September. For the first week we remained at Tamatave or in its neighbourhood, chiefly at Soamandrikazay, on the Hivondrona river, and about four miles from its mouth, where we were most hospitably entertained by Mr. Ferdinand Fiche. I say "we," for the party consisted of Mr. G. E. Maule, Lieut. R.A., who had come down in the 'Gorgon,' and Mr. J. Magee, a gentleman who for three months had been collecting the rare and splendid orchids of the country. We then proceeded to Foule Point and Fenerive by easy stages, arriving at the latter on the 16th September. There is but little variety in the country between Tamatave and Fenerive; the route lies close along the coast, for a great part of the way on the beach, the men and ourselves often walking in the surf for the sake of the firmer tread the wet sand afforded us. When the path leaves the shore, it passes through thick scrubby bush, which, shutting out the wind, but allowing the sun at mid-day to come streaming down, makes walking in the deep sand weary work,—or over large plains of grass, closely eaten down by the large herds of cattle. Several rivers have to be crossed; and as there is generally only one small canoe for the passage, and that often on the wrong side of the river, with the ferryman absent, much time is lost in getting men and baggage over, the former being nearly always too much afraid of the "*Voay*" (Crocodiles) to swim across* About five miles from Fenerive the country becomes slightly undulating, and apparently continues so for some miles to the northward. We left Fenerive on the 19th, and reached Soamandrikazay again on the 21st. Thence we proceeded up the right fork of the river called Fangandrafrah in canoes for about fifteen miles, in the hopes of finding a certain patch of forest which we were led to believe abounded with all living creatures that delight the eyes of a naturalist. The river winds between small hills, increasing in size as we get further to the south-west. Not long since they have been all clothed with forest, but the trees have been cut down and burnt for the sake of planting rice; not that the increased consumption of that article has been the motive, but the natives find that, after three or four crops on the same ground, the yield diminishes, and so the forest is sacrificed to obtain fresh ground. At the present time the country is covered with tall, rank grass, eight or ten feet high, and a species of *Hedychium*, through which it is exceedingly hard work to force a passage. Occasionally a small patch of forest has been left standing, but to no great extent—probably some spot which superstition forbids the natives to disturb. Small villages perched on the tops of hills occur every mile or so; and the people appear very glad to see us, bringing us presents of fowls and rice, but not able to understand our object in coming up their river. A good few canoes laden with rice meet us, and occasionally we overtake one laden with that curse of the country, rum. For two days we paddled on, the stream getting stronger and narrower; the second day we passed about eight rapids, at each of which nearly all hands had to get out and drag the canoes up, making our progress very slow. At last, just as it was getting dark on the second day, we came to a much larger rapid, which would have taken some hours to ascend; and so here we resolved to stop, having got very little for our pains. The next morning, being unable to find any forest worth mentioning, and not having a sufficient number of men to make a journey on foot, we were compelled to paddle back to Soamandrikazay, an operation our men found much easier than going up the stream. Notwithstanding this, they managed to capsize us in descending a rapid, and washed everything but guns, powder-horns, and shot-pouches out of the canoes.

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* At one narrow, clear stream, however, just before reaching Foule Point, there was a very decent bridge; and below it we found the scarce Lattice-leaved plant (*Ouvirandra fenestralis*) growing plentifully.

A few days after, Mr. Magee and I went up the left fork, or rather the main river, Hivondrona; and having proceeded to the small village of Ampasimaventy (which was as far as we could by canoe), we walked on, for about three hours, to a place called Chasmanna, where there were three or four tumble-down houses on the verge of a forest.

The country through which we had passed was much the same as that through which the right fork flows, the hills only being on a larger scale. The channel of the river just above Ampasimaventy becomes wider and more rocky; occasionally its width is from one to two hundred yards, through which the stream runs in separate courses, as it is the dry season, making several very pretty waterfalls. In the rainy season, when the whole bed of the river is full, forming one grand torrent of foam, it must be magnificent. It struck me as singular what can become of the mass of water which even in the dry season flows down. I presume it must be absorbed or evaporated in the vast marshes and lakes on the immediate line of the coast; for the width of the river at its mouth is certainly not half as great as at Ampasimaventy, perhaps twenty miles off, and not much deeper. At Chasmanna I was sorry to see the destruction of the forest still going on. Several large tracts were being cut down, and the fine timber was burnt as it lay on the ground, though there were thousands upon thousands of acres of ground apparently available and already cleared. We remained here three nights, when we were obliged to return to Tamatave, the arrival from Antananarivo of the Mauritian embassy being every day expected; and eventually I returned to Mauritius on the 12th October. During this trip I was able to ascertain the native names of most of the birds I observed. Each species nearly always has a separate one, and sometimes even more than one (for instance, *Ardea bubulcus*, the most conspicuous and characteristic bird of the east coast of Madagascar, has three), and I met with very few people who could not give at once the name of any species shown to them. The Marmites, who chiefly obtain their livelihood by carrying persons or goods from place to place, and consequently travel over various parts of the island, are generally acquainted with every synonym a bird may have; and I am led to believe that there are but few species which are known by the residents in the different districts by the same name. To Mr. Fiche I am indebted for the orthography of most of the local names.

I am able to add to my list a few other species, and additional information, through the kindness of Capt. Anson, R.A., who was one of the coronation mission to the capital, and of Mr. Caldwell, who went up in charge of the presents to His Majesty King Radama.

[*Obs.* The names of the species made known as inhabitants of the island since the publication of Dr. Hartlaub's 'Ornithologischer Beitrag zur Fauna Madagascar' are given in small capitals; those included by him, in italics.]

1. TINNUNCULUS NEWTONI, Gurney, 'Ibis,' 1863, p. 36, pl. 2.

"Hitsikitsikia" (so called, I believe, from its habit of treading the air; in fact, "wind-hovering").

I obtained several skins of this little Kestrel. It is very common on the coast, particularly a few miles to the northward of Tamatave. Probably in this part of the country they always breed in the hole of a decayed tree, or on the large tufts of ferns or orchids which grow luxuriantly on the tall trees, and even on the brushwood.

At Fenerive, on the 17th September, Mr. Maule discovered a nest with five eggs, situated on a parasite growing on a tree, and shot the female bird. To Mr. Caldwell also I am indebted for several eggs which were brought to him when staying at Antananarivo, and which were found in the sides of the deep trenches cut by the Hovas for the purpose of conducting water from the tops of the hills to the rice-grounds below, and which, from constant use, are now worn many feet deep. The eggs resemble those of the genus generally in all their varieties, and are in long diameter 1·4 inch, transverse diam. 1·26 inch.

Iris hazel, beak bluish horn-colour; cere, skin round the eye, and legs *orange*-yellow in the males: in the females the latter parts are *greenish* yellow.

2. *Milvus parasiticus*, Daudin.

"Papango."

Common everywhere. One killed at Fenerive, on the 17th September, had the iris yellow, beak and cere yellowish white, feet bright yellow, claws black.

3. MILVUS ATER (Gmelin).

I shot a bird of this species (which, as far as I know, has not hitherto been noticed in Madagascar) on the Hivondrona, on the 8th of September.

4. *Nisus madagascariensis*, Verreaux.

"Parrafody" (which being translated means, I believe, that which eats the "Fody," or *Foudia madagascariensis*; so, literally, it is the "Fody Hawk").

Between Foule Point and Tamatave, on the 20th, I saw a Sparrow-hawk, but unfortunately I had not a gun at hand. On the 1st of October, between Ampasimaventy and Chasmanna, on the river Hivondrona, I killed a male. Iris, cere, and orbits yellow; beak horn-colour; legs yellow.

5. CIRCUS MACROSCELES, A. Newton, Proc. Zool. Soc., May 12, 1863*.

"Fandrantsadambo" (meaning, that which tears its food as a pig does).

On the 22nd of September we were quietly paddling through a clump of tall bulrushes, where we had marked down a small flock of the little White-breasted Duck (*Nettapus auritus*), when I saw a Harrier hover for an instant just above the rushes, and plunge down into them. Immediately there was a loud outcry from some water-fowl, probably a *Porphyrio*, one species of which I had before killed in this same clump of rushes. We pushed on to the spot with some difficulty, as the canoe's head was in another direction, and it was no easy matter turning it among the rushes. The Marmites would not keep quiet, but were constantly talking; and as we were not nearly within shot, I was in considerable excitement for fear the Harrier should fly away before we got up. However, when we were about thirty-five yards off, he rose, and I killed him. On picking him up, I found he had been robbing some water-fowl's nest, his mouth and crop containing three young birds, evidently taken from the egg-shell, with fragments of the latter, coloured pinkish white, with red spots, like that of a Water-rail or *Porphyrio*. We looked for the nest in vain, and I presume the canoe must have passed right over it and swamped it.

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* We subjoin Mr. A. Newton's description of this new bird:—

"CIRCUS MACROSCELES, sp. nov.

"*C.* aspectu *Circo cyaneo* generaliter similis, sed statura valde major.

"*Descr. maris hornotini.*—Coloribus omnino ut in exemplis *Circi cyanei* ejusdem ætatis, sed striis scapinis ventris longioribus, caudæ tegminum latioribus, et rectricum transversalibus angustioribus clarioribusque. Long. tot. 22·75; alæ plus quam 15; caudæ 10; tarsi 4; dig. med. c. ung. 2·75; rostr. culm. 2," poll. et dec. Angl.—ED.

On skinning the bird, I found it was a male, though in the brown-streaked plumage, and therefore probably a young bird. The Marmites knew the bird at once, and pronounced it to be much more destructive to chickens than the "Papango"[*]; it cannot, however, be very common, as this is only the second example of the genus I have ever met with in Madagascar. Iris yellow, tip of beak black, base horn-colour, cere yellow, claws black.

6. *Polyboroides madagascariensis* (Daudin).

"Feheark."

I saw this species on two occasions about ten miles up the Hivondrona, and also at Foule Point, where I observed, in a freshly skinned specimen, that the legs bend back in the same manner as described by Mr. Ayres (Ibis, 1859, p. 237) when writing of its congener, *P. typicus*.

7. ? *Otus madagascariensis*, A. Smith.

Captain Anson, when close to Tamatave on his return from Antananarivo, wounded a brown Owl, which he brought on board the 'Gorgon' alive; but it died the first night, and the Malagasy servants, from their stupid superstition, threw it overboard. It appeared to me to be identical with the specimen obtained by Dr. Meller[†], which was sent to England some months after his return from the capital. At Ampasimaventy I heard, at night, the cry of a bird, which I was told was a species of "Vorondolo," but brown, and with a head like that of an Ox! Captain Anson's bird had no appearance of tufts; it was, however, hardly old enough to have shown them distinctly.

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[*] It is, perhaps, worth while mentioning, that a specimen of a Harrier in the museum here, and which is said to have come from Réunion, is labelled "Papango."

[†] This was *Otus madagascariensis*; see P. Z. S. 1863, p. 160, where a list of Dr. Meller's collection is given.—Ed.

8. *Strix flammea*, Linnæus.

"Vorondolo."

By no means uncommon in the neighbourhood of Soamandrikazay. At dusk one was generally to be seen flying round the buildings of the cane-mill, or to be heard snoring, if it was too dark to see it. One moonlight night I saw three, but I was never fortunate enough to shoot one there. However, one very hot afternoon, the 24th of September, we were proceeding up a narrow tributary of the Hivondrona, when one of our men cried out "Vorondolo!" and, to our astonishment, we saw a White Owl sitting in the full glare of the sun on a branch of a species of *Acacia*, then totally devoid of leaves, and Mr. Maule shot it. It had the iris black, beak whitish, legs brown. I cannot detect any difference between this bird and those brought from Antananarivo by Mr. Caldwell, to whom I am indebted for the following interesting account of this bird at the capital, where it appears much commoner than I was last year inclined to believe (Ibis, 1862, p. 269). Mr. Caldwell had ample opportunities of observing it, having remained there upwards of two months. He writes as follows:—"The Owl's eggs (five in number) were brought to my house at Antananarivo for sale, in consequence of my having promised a reward for them. I then offered the man another dollar on condition of his bringing me in person to the nest he found, that I might see it with my own eyes. In a couple of days he returned, took me to the rock over which the Christians were formerly thrown, and led me along a ledge, when I was obliged to take off my shoes and stockings for fear of slipping. The face of the rock, when not precipitous, is covered with the prickly pear and scanty coarse grass. It was on this ledge that I got the second nest. The bird was sitting when I came up, and there were four eggs. The nest was *on the rock*, under a prickly pear; and the eggs barely separated from the rock by a little of the coarse grass which grew there. In fact, there appeared to be no attempt made to take any trouble in forming it. It was not in the dark, the opening or passage looking to the north-west, and the whole rather exposed than otherwise to the hot sun, which was powerful enough to make it very unpleasant to walk bare-footed over the granite rock. As I was remounting the ledge to get to the narrow path I had come by (for I had gone down the slope about fifteen feet to get to the nest), I saw another Owl sitting on a nest exactly similar, and as the bird flew away knocked her down with a stick, and took the eggs also, four in number. It was about half-past three in the afternoon. I also disturbed several others, but could not get at their nests. * * * The Owls appear to roost all over the face of the precipice, at least a mile in length, on the western side of the capital, and go out at nightfall, cruising about the rock and over the town for a quarter of an hour. After that time they always flew straight away to the low country and rice-grounds to the west." The eggs measure from 1·82 inch to 1·78 inch in length, by 1·31 inch and 1·3 inch in breadth, and are, of course, white.

9. *Caprimulgus madagascariensis*, Sganzin.
"Tar-tāro."

Common on the coast. Mr. Maule killed one on a narrow spit of sand close to the mouth of the Hivondrona river, where there was not a blade of grass or covert of any sort within a hundred yards. At Fenerive, on the 18th of September, I shot a Night-jar off her eggs, which are in long diameter 1·08 inch, transverse diameter ·82 inch, and of the same character as those of *C. europæus*, but rather darker in colour. The situation where I found them, too, was such as would be chosen by the latter bird.

10. *Cypselus ambrosiacus* (Gmelin).

Nearly everywhere on the coast I found this species tolerably common; the specimen preserved was killed at Soamandrikazay, on the 23rd of September.

11. *Phedina* ——? sp. indet.

I saw examples of this genus at the village of Hivondrona, and again higher up near Ampasimaventy, but on neither occasion did they appear to me to be *Phedina borbonica* *.

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* I may here mention, with reference to my remark (Ibis, 1862, p. 270, *note*), that the hurricane of 1861 has not entirely exterminated this species

12. *Eurystomus madagascariensis* (Linnæus).

"Voronkark."

I saw one example at Chasmanna. Though we passed over the same route as Dr. Roch did last year, between Tamatave and Foule Point, and where he found this species so plentiful, we did not observe it. We were very nearly two months earlier; and perhaps the bird in those parts is migratory.

13. *Brachypteracias leptosomus* (Lesson).

A specimen was obtained by Captain Anson near Ampasimbé on his return from Antananarivo.

14. *Atelornis pittoides*, Lafresnaye.

Obtained by Captain Anson and Mr. Caldwell in the forest of Alanamasaotra—the only locality in which I have yet heard of it.

15. *Corythornis vintsioides*, Lafresnaye.

"Vinshi."

As common as it was last year.

16. *Merops superciliosus*, Linnæus.

"Kirio kirio" (so called from its cry).

To be seen hawking about the Hivondrona river almost daily. On the Fangandrafrah, a tributary of the Hivondrona, I dug out a female Bee-eater from a hole in the bank of the river, about three feet in length; the nest was not yet made, and the bird's beak was covered with soil, showing that she was still working at the excavation. All the specimens, of both sexes, that we obtained were bare of feathers on their breasts and thighs, as if incubating. That they had not all done so, was evident from the nest of the one I have mentioned not being finished; yet it and its mate were both as naked as the others. Is this a peculiarity of the genus? In both sexes, iris red, beak black, legs brown.

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in Mauritius, but it is certainly much rarer; for at the locality in the district of Savanne where I have observed it to be most plentiful I remained for ten days, in June 1862, and never observed more than three at once, and as they were always at the same place, they might have been the same individuals.

17. HYPHERPES CORALLIROSTRIS, A. Newton, Proc. Zool. Soc. 1863, p. 85, pl. 13*.

"Sakôdy."

At Chasmanna, on the 2nd of October, I killed this pretty little Creeper as it was climbing up a dead tree: it was the only one observed, but the natives said it was not uncommon. Iris very dark red, beak vermilion, legs lead-colour. Male.

18. *Nectarinia angladiana*, Shaw.

"Shoie."

Observed all along the coast, but at Fenerive only it appeared tolerably common.

19. *Nectarinia souimanga* (Gmelin).

Common everywhere. On the 1st of October, paddling up the Hivondrona, I found a nest of this bird, containing two eggs, on the bank, almost overhanging the water; it was a domed one †, and was very prettily placed in some tall grass, the blue flower of a *Lobelia bicolor* almost closing the entrance. It is composed outwardly of broad leaves of grass, decayed, and a little moss; over the entrance it has a sort of projecting pouch of a finer grass, and inside it is lined with down of some plant. The eggs, which were hard-set, are greyish white, thickly freckled with light hair-brown, so as to show but little of the ground-colour. They are ·59 inch in length by ·44 inch in breadth.

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* We subjoin Mr. A. Newton's description of this entirely new form of bird:—

"HYPHERPES, genus novum *Certhianum* vel *Sittinum*.

"*Char. Gen.*—Rostrum breve, robustum, leviter emarginatum, ad apicem aliquanto compressum, rictu setoso. Alæ mediocres, rotundatæ, ad caudam mediam attingentes, remige quarto, quinto et sexto æqualibus; tertio septimum, et octavo secundum, superantibus; primo multo breviore; cauda mediocris, prope æqualis, rectricibus duodecim aliquanto rigentibus. Pedes validissimi, tarsis quam digiti medii posticique longioribus, unguibus compressis, subvalidis.

"HYPHERPES CORALLIROSTRIS, sp. nov.

"Capite, gutture, pectore et abdomine schistaceo-brunneis, olivaceo indutis; collo, dorso, alis caudaque supra fusco-cæruleis, virente tinctis; remigibus fuscis, extus pallide marginatis, intus cervino latius limbatis, ut in *Tichodroma*; uropygio et crisso subrufescentibus; rectricibus obsolete fasciatis; rostro toto coccineo; pedibus plumbeis; iridibus obscure rubris. Long. tot. 4·8; rostr. a fr. ·4, a rict. ·65; al. 2·9; caud. 2·2; tars. ·9; dig. med. c. ung. ·8, post. ·97."—ED.

† I mentioned (Ibis, 1862, p. 272) that last year I observed an open nest of this species; as it was only building, I presume the birds had not put the roof on when I saw it.

20. *Drymœca madagascariensis,* Hartlaub.

"Teng-teng."

By far the commonest Warbler on the coast.

21. *Bernieria madagascariensis* (Gmelin).

"Tra-trak."

On the 3rd of October, at Chasmanna, I shot a female of this species in the forest. It was hopping about in a thicket, and I had but little time to watch its habits or movements; its stomach was filled with the remains of spiders. Iris light brown, upper mandible dark brown, lower horn-colour, legs and claws brown, soles yellowish.

22. *Bernieria minor,* Bonaparte.

"Tra-trak."

Not two hundred yards from where I killed the last-mentioned, I shot an example of this species, a female also. My people could not detect the difference, and called them by the same name. This bird also was among some thick bushes.

Iris light brown, upper mandible dark brown, lower yellowish, legs greyish yellow, claws flesh-colour: stomach filled with remains of beetles.

23. *Ellisia typica,* Hartlaub.

"Parety."

On the 18th of September I was in a small scrubby patch of forest, when, from a thicket by the side of the path, the Marmite who was with me picked up a nest containing three eggs; they were a puzzle to me. In appearance the latter were Bunting's; and when I saw the situation of the nest, it was exactly such as would have been chosen by *Emberiza citrinella.* We replaced the nest as carefully as possible and retired some few yards. After waiting a few minutes and not seeing the bird, I went up to the nest, and found her on. I wanted to get her to cross the path, so as to give me the chance of a shot; but she dived into the thicket a few feet from where I was, and disappeared. I retired, and soon made her out, creeping among the branches, jerking her tail and uttering a low harsh note, something like a watchman's rattle. I was too close to shoot; but it was no use increasing the distance, as then I lost sight of her altogether. So I drew both powder and shot, reloaded with only half a charge of each, and fired through the thick bush. On going to the spot, to my disgust, I found I had missed; and as the morning was damp, and my powder none of the best, the smoke hung heavily for some minutes close round, making me afraid it would drive the bird away. Just then a very heavy shower came on, wetting me through; but the bird reappearing in the bushes, I shot again and again, to no purpose. Two minutes after, the man who was with me made a grab at the nest, and, to my astonishment, I found he had caught the bird in his hands.

It was a female. Iris hazel, upper mandible dark brown, lower yellowish, legs lead-colour.

The eggs, in long diameter ·86 inch, and transverse diameter ·59 inch, are of a pale madder-pink, blotched and streaked in Bunting-like lines with darker shades of the same colour, so as to be not at all unlike some eggs of *Anthus arboreus*.

The nest is composed outwardly of dead leaves of coarse grass, and inwardly of fine flower-stalks of some plant.

24. CALAMOHERPE NEWTONI, Hartlaub, Proc. Zool. Soc., May 12, 1863[*].

"Vorombendrana."

This species is not at all uncommon on the river and lakes where bulrushes grow, near Soamandrikazay. The male is often seen perched on the top of a tall rush or projecting twig on the bank, singing nearly as sweetly as a European Nightingale.

On the 9th of September we found the nest of this bird, containing three eggs, supported between three or four bulrushes; and though at the time the water was low, the base of the nest actually touched it. It is very neatly made, and in shape much resembles that of *Salicaria arundinacea*; it is composed of decayed stems and leaves of grass and one or two feathers; inside it is lined with fine bents and feathers. The eggs measure ·77 inch in long diameter by ·57 inch in transverse diameter; they are pale greyish white, thickly spotted and blotched with pale lilac, brownish orange, and hair-brown. Iris hazel, upper mandible dark brown, lower mandible dusky orange, inside of the mouth and tongue bright orange, legs brownish lead-colour.

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[*] We subjoin Dr. Hartlaub's description of this new species:—

"CALAMOHERPE NEWTONI, nob.

"♂. Supra obscurius olivascens, subunicolor, subtus multo pallidior, medio subflavicans; mento gulaque albidis; jugulo maculis longitudinalibus fuscis conspicue notato; subalaribus flavo-albidis; subcaudalibus obscuris; maxilla fusca, mandibula obscure aurantiaco-rubente, ore interno læte aurantiaco; iride helvola. Long. $6\frac{1}{3}''$; rostr. a fr. $6\frac{1}{4}'''$; rostr. a rict. $9'''$; al. $2''\ 7'''$; caud. $3''$; tars. $11'''$.

"Ala brevis. Cauda longa, rotundata, rectricibus angustatis, apice rotundato-attenuatis."—ED.

25. *Pratincola sibylla* (Linnæus).

"Fetah."

Is very common on the open country in the neighbourhood of Foule Point. Its song resembles that of the European species. On the 19th of September, between Fenerive and Foule Point, I found a nest of this species, containing three eggs, in a tuft of coarse grass. The eggs are of a pale greenish blue, thinly freckled and streaked with light rust-colour, very like some examples of *P. rubicola*. Long diam. ·78 inch, transverse diam. ·58. Iris dark brown, beak and legs black.

26. *Gervaisia albospecularis* (Eydoux & Gervais).

"Todeah."

I am indebted to Mr. Caldwell for a skin of this species (the first I had seen), obtained at Betanaombé, near Tamatave, July the 8th, 1862. I observed it, on our way from Foule Point, in the scrub by the sea-side; but on the coast I do not think it is very common. Some fifteen or twenty miles up the Hivondrona we found it in considerable numbers. In its habits it resembles a Redstart, perhaps, more than a Stonechat; the male, perched on a tall branch, sings a loud but monotonous song, every now and then descending to pick up some small insect from the ground and returning to its post, while his mate seeks the shelter of the bushes and does not readily show herself. At Chasmanna, on the 2nd of October, I found a nest of this species in the stump of an old tree which had been cut off roughly some six feet from the ground; it was placed in an indentation about halfway up, quite exposed; in fact, in the same sort of situation as I have often seen chosen by the Spotted Flycatcher (*Muscicapa grisola*).

Having stated that I wished to have the bird, the chief of the village, who was with me, picked up the tendril of some plant, and in a minute had affixed a capital snare over the nest. The sun was then hot; and as it had been raining before, it was probable the bird would be some time before she returned to the nest, so I went home to breakfast. Shortly after, the bird was brought to me by the chief's little girl, who had been sent to fetch it, alive and with the snare round one foot. Unfortunately, as is frequently the habit of the Malagasy, the wretch of a child had pulled out all the quill-feathers of the tail and wings, destroying the bird as a specimen.

The nest was large, in appearance very like a Stonechat's, composed of grass, moss, and the down of some plant, and lined with finer material of the same nature. The eggs are of a very pale bluish green, thickly blotched or mottled with lilac and hair-brown, the patches of the latter colour prevailing. Long diam. ·87 inch, transv. diam. ·63 inch. Iris brown, beak black, legs dusky grey, soles yellowish.

27. *Motacilla flaviventris*, J. Verreaux.

By no means common; but a pair were here and there to be seen distributed over the part of the country I visited. I never succeeded in obtaining a nest; but from what I saw of them on several occasions, I have no doubt it was not far from the season of incubation with them.

In habits they resemble the European Pied Wagtail more than either the Yellow or Grey, and are not always by the water. Iris dark brown, beak black, legs lead-colour.

28. *Zosterops madagascariensis* (Linnæus).

"Ramanjerek."

I believe this species is the one usually seen in the forests; but specimens are exceedingly difficult to shoot, and often only to be seen by gazing up to the tops of the highest trees, amongst the boughs of which they are constantly hopping and climbing, and never for a moment at rest. On the 3rd of October I obtained a pair at Ampasimaventy. Iris dark brown; beak lead-colour, darker at tip; legs lead-colour.

29. *Hypsipetes ourovang* (Gmelin).

"Horaovana" (pronounced "Wroova").

Certainly the commonest bird I met with. On the 4th of October, at Ampasimaventy, a man brought me a live Thrush, the lining of a nest, and two eggs, on which he said he caught the bird. It proved to be a female, and had the breast bare of feathers. The nest appears to have been outwardly composed of coarse grass, roots, and moss; it was lined with the fine flower-stems of some unbelliferous plant.

The eggs are creamy white, blotched and spotted thinly with lead-grey, and more thickly with deep pinkish brown—the latter markings being chiefly disposed at the larger end, or distributed zonewise. Long diam. ·93 inch, transv. diam. ·74 inch. Iris bright red, beak orange, legs dusky yellow.

30. ERYTHROSTERNA (?) BRUNNEICAUDA, A. Newton, Proc. Zool. Soc., May 12, 1863*.

Near Fenerive I obtained two examples of this species, both females, on the 16th and 18th of October respectively. Iris light yellow, beak black, legs lead-colour.

31. *Tchitrea pretiosa,* Lesson.

"Sket-vololo."

I once or twice saw this bird (and, from his description, I believe Dr. Roch saw it last year at Ranomafana), but I did not get a shot at one until I was at Chasmanna. They generally keep in thick bushes or dark forests, and, notwithstanding their conspicuous plumage, are not often seen. I saw one rufous-coloured example of a "Sket" on the coast and at Chasmanna, but did not obtain it. Dr. Meller had a specimen in that plumage. Iris dark brown; skin round eye light blue; interior of mouth bright yellow; lower mandible bluish, upper black; legs lead-colour.

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* We also subjoin Mr. A. Newton's description of this apparently new bird:—

"ERYTHROSTERNA (?) BRUNNEICAUDA, sp. nov.

"*E.* ad *Erythrosternam parvam* multo appropinquans, sed cauda unicolore.

"*Descr. fœminæ junioris*(?).—Supra olivaceo-murina, remigibus externe pallidius limbatis, subtus rufescenti-albida; rostro nigricante, pedibus schistaceis, iridibus pallide flavis. Long. tot. 4·62; alæ 2; caudæ 1·45; tarsi ·71; dig. med. c. ung. ·48; rostr. ·38."—ED.

32. *Ceblepyris cana* (Lichtenstein).

"Angave."

I shot a male near Chasmanna on the 1st of October; it appeared not to differ in plumage from the females obtained last year.

33. *Artamia leucocephala* (Linnæus).

A pair of these birds were obtained by Mr. Caldwell in the forest of Alanamasaotra.

34. *Leptopterus viridis* (Gmelin).

"Voron-va-sat-sat."

Plentifully distributed all over the country I visited. It appears to live chiefly on caterpillars from the leaves of trees. In its flight it makes tremendous dips. I never heard it utter a note. There is scarcely any difference in plumage between the sexes.

35. *Dicrurus forficatus* (Linnæus).

"Drongo."

After the Thrush, this I consider to be the commonest bird. In its habits it is a true Shrike. I obtained several nests; the most favourite position is a bough overhanging a river. Three appears to be the normal number of eggs laid. A nest I have by me is composed of roots and the tendrils of some plant, and is woven neatly to the fork of a bough by spiders' webs. The eggs are of a pale salmon-colour, with light lilac blotches and reddish-brown spots, the latter markings blurred. Long diam. 1·1 inch, transv. diam. ·74 inch.

36. *Vanga curvirostris* (Gmelin).

"Voron-bang," "Vanga."

Nowhere common, and, from its retiring habits, much oftener heard than seen. It appears generally to hide amongst the leaves of trees. One that I killed on the 16th of September had its stomach filled with large grasshoppers. Its note is most peculiar—a single one very high-pitched, and ringing like a blow struck by a heavy hammer on an anvil; this is repeated at short intervals, and may be heard from a distance of half a mile.

37. *Corvus madagascariensis*, Bonaparte.

"Quork."

Common generally; but at Fenerive it did not appear to be so plentiful as elsewhere. They are in general very tame. The eggs are in character truly typical of the genus. Long diam. 1·64 inch, transv. diam. 1·23 inch.

38. *Hartlaubia madagascariensis* (Linnæus).

"Vorontaynombi" (literally, "Cattle-Dung Bird," from its habit of turning over cattle-dung in search of insects).

Met with in tolerable numbers. In the afternoon from ten to twenty often assemble on some tall tree to catch the last rays of the sun, as Starlings are wont to do in England. On the 20th of September I observed two females carrying materials for their nests.

39. ACRIDOTHERES TRISTIS (Linnæus).

At Fenerive on the 17th of September, and near Foule Point on the 20th, I saw a pair of these birds. Last year, when near Foule Point, Dr. Roch believed he saw a species of this genus, larger than the Mauritian bird; but I have very little doubt that they are identical, having at Fenerive a very good opportunity of watching a pair feeding amongst a herd of cattle.

I do not think the species has been introduced into Madagascar itself; but I think it is possible they may into the French colony of St. Mary's close by, and from thence made their way across to the main island.

40. *Nelicurvius pensilis* (Gmelin).

Two specimens of this bird, most grievously shot about, were brought to me at Fenerive.

41. *Ploceus* ——? sp. indet.

One of my companions found in the forest at Fenerive two nests (one of which he brought in, containing young but a few days old) which probably belonged to some species of *Ploceus*. It might, however, possibly have been that of the last-mentioned bird, though the natives declared that it was not. The nest is composed of the strips of leaves of, I think, a species of palm-tree, each strip being from an eighth to a quarter of an inch wide, and very neatly woven together, 21 inches long and 7 broad,—the entrance being at the bottom, and leading up a narrow sort of pipe 9 inches long, and turning down again into a roomy chamber for the reception of the eggs or young. It was suspended from the top of a bamboo. In the forest of Chasmanna I observed a pair of Weaver-birds building, but I did not obtain either.

42. *Foudia madagascariensis* (Linnæus).

"Fody."

Very common at Fenerive, and also frequently seen on the Hivondrona. The males were beginning to assume their red plumage.

43. *Spermestes nana* (Puch.).

Common, especially where there is or has been cultivation. They generally keep in flocks of from a dozen to fifty.

44. *Mirafra hova*, Hartlaub.

"Borea."

In the neighbourhood of Foule Point this Lark is tolerably numerous, but not nearly so common as on the great plain near the Mangourou. On the 15th of September I observed one with building-material in its mouth. Iris brown, beak and legs flesh-colour.

[To be continued.]

XXX.—*Recent Ornithological Publications.*

1. English Publications.

Some of our correspondents, who have expressed in their letters their wishes for a new and authentic catalogue of the European Avifauna, will, we feel sure, be pleased with the acquisition of Prof. Blasius's 'List of the Birds of Europe' *, lately reprinted from the German, and "brought out by two good friends of 'The Ibis.'" This list, though in some points it does not quite meet our approval, we regard as certainly the most complete and the most satisfactory of all that have yet appeared, and likely to be of great assistance to the students of the European Ornis. The species are divided into three categories:—

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* A List of the Birds of Europe. By Prof. J. H. Blasius. Reprinted from the German, with the author's corrections. Norwich: Matchett and Stevenson. London: Trübner and Co. 1862. Price 1*s*.

	No.
Species breeding in, or regularly visiting, Europe....	420
Accidental visitors	103
Varieties commonly considered as species	55
	578

And, besides these, those which rest on doubtful authority, so far as their occurrence in Europe is concerned, are inserted in their proper places, but marked with notes of interrogation. This is a very convenient arrangement; and another advantage of the present list over its predecessors is, that the names of the families extraneous to Europe are inserted in their places, so that we get a better idea of the deficiencies of European ornithology than is usually presented to us. While according this praise, however, we feel bound to mention certain objections to Prof. Blasius's system of nomenclature as here adopted. These are (1) his use of specific names given by authors anterior to Linnæus—such as those of Brisson, Ray, and others, who were no binominalists, and have no claim to have their appellations employed in a binominal system; (2) his refusal to use names originally proposed as specific in a generic sense*. This practice renders obligatory the employment of many generic terms which are either new or in little use, and introduces a fresh element of discord among naturalists. These are direct infractions of the code of laws of nomenclature put forward by the British Association for the Advancement of Science, which we consider the best set of rules ever drawn up for the guidance of naturalists on this difficult subject. There is, of course, much to be said on Prof. Blasius's side of both these questions, and we do not quarrel with him for following his own system in these matters. We merely refuse to follow his lead ourselves, and we attempt to dissuade others from so doing.

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* Such as *Locustella* for the *Locustella rayi*, which is called *Parnopia* (!) *locustella*; *Cisticola* for the *C. schœnicola*, Bp., which is termed *Schœnicola cisticola*; *Francolinus* for the *F. vulgaris*, which is called *Chætopus francolinus*, &c.

It would not be difficult, of course, to fill several pages with criticisms on such a fertile subject as a 'List of European Birds,' but we shall content ourselves on the present occasion with a very few remarks.

Falco dichrous of Ehrhardt now appears to be certainly nothing more than *Falco eleonoræ*,—Dr. Krüper having obtained from the Cyclades specimens of this bird from the very locality (if we understand aright) where Ehrhardt had procured it (cf. Journ. f. Orn. 1862, pp. 437–439).

Aquila nævioides must, we think, be promoted into the first rank of species "breeding in, or regularly visiting, Europe," Dr. Brehm's Spanish *Aquila adalberti* being certainly neither more nor less than this bird.

Micronisus badius. We do not know upon whose authority this Indian species is inserted in the European list. The examples of *Micronisus* from Syria which we have examined do not seem referable here (see Ibis, 1859, p. 390), and it is, we believe, this same form which is occasionally met with within the confines of South-eastern Europe.

Telephonus tschagra. We doubt the occurrence of this bird even as a straggler in Europe. The localities given in Temminck's Manuel are utterly unreliable, and modern testimony is against the presence of this bird in Spain. It should be placed in the category of "doubtfuls."

Turdus fuscatus, Pallas, is rightly inserted among the stragglers that visit Europe; but *Turdus naumanni* (figured 'Ibis,' 1862, pl. x. p. 319) is omitted. *We* are only acquainted with this bird as an inhabitant of Eastern Asia; but, according to the latest supplement to Naumann's Birds of Europe, it is of not unfrequent occurrence in Hungary.

The twenty-third volume of the 'Journal of the Royal Agricultural Society of England,' which was published last year, contains a translation by Mr. Henry L. B. Ibbetson of a pamphlet on 'Destructive Insects, and the immense utility of Birds,' by Professor von Tschudi. Of course the sympathies of every ornithologist must be with both the author and his translator; but this publication is not quite free from the fault, so common in all others we have seen on the same subject, of assuming that because one set of opinions is right, it follows that the contrary set must be wrong. There is a good deal more to be said on the other side of the question than many people will allow. We hope it will not be supposed for an instant that we are defending the wholesale destruction of birds in any way; but if man disturbs the balance of nature in a good many ways, as he assuredly does, it is clear that he is not a neutral power in the great "struggle for life." Hence one side often gets an undue advantage, and requires a corresponding check to restore the equilibrium. The following extract may serve to explain why some species of birds, which are certainly not particularly persecuted, often become scarce in localities where they were formerly abundant, and it may also help to account for the often-noticed scarcity of small birds on the Continent of Europe:—

"Generally speaking, the progressive cultivation of the earth is not very favourable to animals living in freedom. . . . . But it has been especially hostile to birds. The hospitable thickets diminish yearly: man forces onward the limits of his domain; he masters the as yet uncultivated soil, and draws from it rich harvests. Large tracts of woodland are cleared to supply the wants of an increasing population and the heavy demands of industry. The large trees formerly left standing in the midst of a field, in which numberless small animals found a refuge, are made away with, or replaced sometimes by the small fruit-tree. Long rows of hedges, the hiding-place of a whole host of birds, meet with the like fate; and these, too, were of other use, for they attracted quantities of caterpillars, which fed on their green leaves, and thus spared the orchards. All the little nooks so useful to birds, both as hatching-places and hunting-grounds, disappear one by one. In woods, the mistake of cutting down, right and left, old trees full of small holes has been, unfortunately, understood too late, and thereby numbers of the best

Insectivora have been deprived of commodious nesting-places; unavailing regrets from those incessantly exposed to the havocs of wood-insects will follow on the disappearance, for years to come, of their best and most active allies of the forest."

Prof. von Tschudi gives an amusing account of the periodical mania for killing birds which every year seizes the Italians, but the passage is too long to extract here. The pamphlet has been carelessly printed; the scientific names are misspelt most cruelly. Even the common names are not always correct. Will the British farmer recognize an old acquaintance in the "Rock Crow (*Corvus frugilegus*)"? We should rather imagine not.

2. FRENCH PUBLICATIONS.

We must confess to having no fewer than nine Numbers of the 'Revue et Magasin de Zoologie' that have hitherto received no attention from us. Those for July and August in the past year contain M. Jules Verreaux's translation of Mr. Alfred Newton's pamphlet on Egg-collecting, which was formerly noticed by us (Ibis, 1860, p. 415); and we trust, with M. Guérin-Méneville, that its publication in French will be found of advantage to the oologists of that nation. Our German brethren have already for some two years had the benefit of the hints it contains, as it was translated by Dr. Baldamus in the 'Journal für Ornithologie' for 1860; and separately printed copies of it in that language may be had from the publisher's agents in London, Messrs. Williams and Norgate, for circulation among the correspondents of English oologists. M. J. Vian has a "Notice sur quelques Oiseaux d'Europe," which is illustrated by a plate representing the eggs, chick, and young in its first plumage of *Limosa cinerea*, the specimens having been obtained from the Russian province of Archangel, where it breeds. The first article in the 'Revue' for this year is by M. O. DesMurs, and consists of a "Notice sur l'œuf de l'*Alca impennis*," to which are appended two plates, from his own designs, of a couple of these rarities which were formerly in his possession, and now, with the rest of his collection, form part of the magnificent Museum at Philadelphia. We do not quite agree with the author that this egg "a été jusqu'ici très-imparfaitement représenté," unless indeed he only means that a very limited number of examples have been figured; for Mr. Hewitson's three plates in the different editions of his work are as near perfection as we could wish. M. DesMurs states that he once had a third specimen also, which we presume from what he says was the original of two of the three figures given by Thienemann. What has subsequently become of it we are not informed. In the last Number of the 'Revue' we have received, that for March of the present year, M. Marchand commences some observations on the "Poussins des Oiseaux d'Europe couverts de duvet à la sortie de l'œuf." They are illustrated by two plates, one representing the chick of *Recurvirostra avocetta*, the other that of *Phalaropus hyperboreus*. M. Marchand has reason to complain of his artist, the latter plate being extremely unlike the original. But we must record our satisfaction that the ranks of French ornithologists have been swelled by the addition of these two gentlemen (MM. Vian and Marchand), and we beg leave to congratulate them on their successful *début*. They have brought into prominence a branch of ornithology which has hitherto received very little attention; and we hope that they will continue their labours in the same field.

3. German Publications.

The 'Monatsbericht' of the Royal Academy of Sciences of Berlin for March 1863 contains a notice by Dr. W. Peters of a new form of Thrush, allied to *Bessonornis*, from the Mozambique, for which the name *Cichladusa* is proposed. The typical species is *C. arquata*, discovered by Dr. Peters near Sena, on the Zambesi. A second species of the same form in the Berlin Museum is Heuglin's *Crateropus guttatus*, from Aniop in N.E. Africa (8° N.L.).

Since we last noticed our well-known and excellent contemporary, the 'Journal für Ornithologie' (Ibis, 1862, p. 381), we have received the fourth and fifth parts of last year's volume, and the first of that for the present year. The principal papers contained in them seem to be Dr. Th. O. Heuglin's "Contributions to the Ornithology of North-eastern Africa," Lieutenant Alexander

v. Homeyer's "Account of the Birds of the Balearic Islands," Dr. Bolle's "Description of *Anthus bertheloti,*" already printed in this Magazine (Ibis, 1862, p. 343), the conclusion of Herr Preyer's paper on the Great Auk, and Dr. Krüper's "Ornithological Notices of Greece," wherein he details at greater length some of the exploits already recorded in these pages by Mr. Simpson (Ibis, 1860, pp. 375 and 378). Herr v. Homeyer designates a topical variety of the Common Crossbill, which he says is of common occurrence even in summer in Majorca, as '*Crucirostra curvirostra,* var. *balearica,*' a fact interesting to those naturalists who look on local races as incipient species. The Ornis of the Balearic Islands has very few, if any, African tendencies. *Fringilla cœlebs, Chlorospiza chloris,* and *Parus cæruleus* occur there just as in Europe, instead of their Algerian representatives, *F. spodiogenia, C. aurantiiventris,* and *P. ultramarinus.* As a sort of set-off to this, we may mention Dr. Altum's record of the occurrence of *Picus numidicus* near Münster in the north of Germany—certainly a remarkable turning-up of the "irrepressible African." Herr Preyer's concluding paper is of great importance to those who are interested in the history of the *Alca impennis.* We cannot refrain from expressing our regret that he has not seen, or, if he has seen, has not referred to, the account of Mr. Wolley's researches contained in one of our former volumes (Ibis, 1861, pp. 374 *et seq.*); for many of the details there set down are in direct contradiction to those given by Herr Preyer, and his comments upon them might have been valuable. He has resuscitated one fact of especial consequence. This is an account, written in the first part of the 17th century, and printed in the first volume of 'Grönland's Historiske Mindesmærker' (Kjöbenhavn, 1838, pp. 123–134), of a visit made some fifty years before to certain islands on the *east* coast of Greenland, called Gunnbjörnsskjærene, and generally identified with the Danell's (1652) or Graah's (1830) islands of later geographers, lying in latitude 65° 20′ N. An Icelander, by name Látra Clemens, or Clement of Látur, sailed thither with two boats, one of which he is stated to have laden with Gare-Fowls (*hlaðit bátinn annan með geirfugl*) at these skerries. The eastern coast of Greenland has often been supposed (see J. W. Clark in 'Vacation Tourists,' 1861, p. 324, and Dr. Hartlaub, "Bericht," &c., in Wiegmann's Archiv, 1858, p. 55) to be the last resort of *Alca impennis*, but hitherto no positive information has been received that the bird ever occurred there. The three islands called Danell's Œer are the last known spots on the coast of East Greenland until lat. 69° 15′ is reached, the intervening parts never having been surveyed, though land was sighted here and there by Scoresby. We may also take this opportunity of saying we think Herr Preyer has exaggerated the number of former breeding-places of this bird in Iceland. He omits to notice the fact that Professor Steenstrup, with apparently good reason, suggests (Vidensk. Meddelels. 1855, pp. 115–116) that Herr Preyer's "Geirfuglasker IV.," mentioned by Olafsen as lying some miles off the Breiðamerkrsandr, is really identical with his "Geirfuglasker III.," stated by Olavius to exist off Breiðalsvík. At all events, the former is ignored in the best maps of Iceland, and is not laid down even in that which accompanies Herr Preyer's own travels in Iceland.

Since the above was written, 'Heft VI.,' which completes the volume for 1862, has reached us. What seems most worthy of note is the discovery, by the Marquis O. Antinori, of a species of Weaver-bird in the neighbourhood of Alexandria (Egypt), which he describes as *Estrelda melanorhyncha*. Dr. Cabanis also identifies our *Pipilo albicollis* (P. Z. S. 1858, p. 304) with the *Tanagra rutila* of Lichtenstein—rightly enough, we dare say, as he has access to the typical specimen in the Berlin Museum.

We have only lately seen a copy of Dr. Burmeister's 'Reise durch die La Plata Staaten'*, though the preface to the second volume (whereby we learn with regret that the learned author has now finally abandoned his native country) is dated two years ago. A list of the species of birds met with by Dr. Burmeister in the Argentine Republic has been already published in the 'Journal für Ornithologie,' and noticed in this Journal†. We now, however, have this in a much more complete form in the "Systematische Uebersicht der Thiere des La Platagebietes," which is annexed to the second volume of Dr. Burmeister's

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* 2 vols. 8vo. Halle, 1861.

† See Ibis, 1861, p. 200.

'Travels.' We have also many valuable notes on distribution, habits, &c., both appended to the account of each species and diffused throughout the narrative. The ornithology of La Plata is, naturally enough, very peculiar. The forms are nearly entirely such as are fitted to inhabit the vast pampas of which the greater portion of the republic consists, and with which the life-like sketches of Head and Darwin have made English readers long ago familiar. The species enumerated in Dr. Burmeister's 'Uebersicht' are 263, viz.—

Rapaces		20	263 species.
Scansores		16	
Insessores :—			
Strisores	15	149	
Clamatores	62		
Canoræ	72		
Columbæ		5	
Rasores		7	
Currentes		1	
Grallæ		37	
Natatores		28	

We see by this summary how far inferior in richness of species is La Plata to the southern provinces of Brazil, where within a much smaller area Dr. Burmeister met with 810 species of birds. The results of three years' travels in La Plata have not furnished means of ascertaining the existence of even *one-third* of this number.

The most remarkable discovery of Dr. Burmeister in the class of birds during his three years' expedition in La Plata was certainly the new Cariama, which Dr. Hartlaub has named, after its discoverer, *Dicholophus burmeisteri.* Other fine novelties are *Geobæmon rufipennis* and *Saltatricula multicolor,* both noteworthy additions to the class of birds.

4. Dutch Publications.

The second livraison of the 'Revue Méthodique et Critique' of the collections of the Dutch National Museum of Natural History at Leyden contains the completion of the catalogue of

Rapaces, by Dr. Schlegel, a catalogue of the specimens of *Pitta*, by Dr. Schlegel, and the commencement of a catalogue of what is termed "*Buccones*," by Lieut. A. Goffin. The general *résumé* of the "Aves Rapaces" shows that the Leyden collection now contains 2002 specimens, illustrating 333 species of this group of birds. This is probably only surpassed by the series in the collection of the Norwich and Norfolk Museum, towards the perfection of which Mr. J. H. Gurney has devoted so much time and trouble.

The series of the genus *Pitta* in the Leyden Museum has long been celebrated for its extent and beauty. Prof. Schlegel catalogues 29 species, appearing in this group to ignore what he has hitherto termed *con*-species, and to consider all the representative forms of the different islands of specific value. The deficiencies of the Leyden Museum appear to be four only, namely, *P. cyanea*, Blyth, of Aracan, *P. rubrinucha* of Bouru, *P. crassirostris* of the Sula Islands, and *P. nympha* of China. Two species new to science are recorded, both from the island of Bangka, between Sumatra and Borneo. These are, *Pitta megarhyncha*, representing *P. cyanoptera* of Sumatra, and *P. bangkana*, representing *P. atricapilla* of Borneo. But the singular fact is this, and one almost without parallel, as far as we know:—if *P. bangkana* be really distinct, we have a species occurring in Borneo and Sumatra, and a different one found in an island exactly intermediate between these two.

The second livraison of the 'Nederlandsch Tijdschrift voor de Dierkunde' contains several ornithological articles. Dr. Schlegel describes (p. 56) the *Buceros nagtglasii*, already referred to in his catalogue of the specimens of this group in the Leyden Museum. This is perhaps the same as Mr. Gould's *Toccus hartlaubi*, P. Z. S. 1860, p. 380. Next follows the same author's notice of three species of *Ptilopus*—*P. bernsteini*, *P. hugonianus*, and *P. insolitus*. Dr. Schlegel has already communicated a note on the synonymy of the first of these species (see *anteà*, p. 120). On Dr. Schlegel's next contribution, relating to the Fruit-pigeons allied to *Treron aromatica*, we have already given

Mr. Wallace's remarks in a separate communication (*anteà*, p. 318).

5. AMERICAN PUBLICATIONS.

The din of arms around Washington does not seem to deter Prof. Baird from his peaceful labours at the Smithsonian Institution. He has lately printed and widely distributed a list of the desiderata of the Smithsonian collection, as regards the birds of Central America, Mexico, and the West Indies. This is, we believe, preparatory to the completion of a catalogue of the birds of this portion of America, which Prof. Baird has had for some time in preparation. Though the list is not very long, considering the number of species exhibited in the complete *Ornis* of these regions, it would take up too much space for our Journal. We must, therefore, request such of our readers as would like to possess it to apply to Prof. Baird, who will forward it by post to any one who takes an interest, or who may be inclined to assist him in the task he has before him.

Mr. D. G. Elliot, of New York, has now published the sixth part of his 'Monograph of the genus *Pitta*,' to the progress of which we have on several occasions alluded, together with a supplementary part, in which the preface, title-page, &c., are given, and the whole work brought to a conclusion. The total number of plates is 31, each of which illustrates a species of the genus,—*Pitta crassirostris* of Wallace alone being unfigured, as Mr. Elliot is unable to assure himself of its distinctness from *P. irena*. A table showing the geographical distribution of the species is given after the introduction. Mr. Elliot separates the *Pittæ* into two groups. The first of these, *Brachyurus*, in which the tail is short and rounded, contains the greater number of the species. The term *Pitta* he reserves for the second section, with the more elongated and cuneate tail, of which only three species are known. We believe Mr. Elliot has correctly included in his work all the known species of the group, except the two new species from Bangka lately described by Prof. Schlegel (see *anteà*, p. 359). We cannot but congratulate Mr. Elliot upon the determined way in which he has brought his work to a conclusion, in spite of the many difficulties which his residence in New York and the critical circumstances of the times have raised against him. It would be untrue to say it is not open to criticism upon some points; but how few undertakings of the sort rise above the standard of mediocrity!

We cannot but conscientiously commend Mr. Elliot's work to our brother-ornithologists, and advise them to make an early application for copies of it, as the drawings are now erased from the stones, and the number left for sale is very limited.

We have several other American publications in hand, a notice of which we are compelled, by want of space, to defer until our next issue.

XXXI.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters, addressed "To the Editor:"—

To the Editor of 'The Ibis.'

Sir,—Having been enabled, by another winter in Egypt, to continue the observations on the habits and nidification of the Spotted Cuckoo (*Cuculus glandarius*), made last year in company with my friend Mr. Allen, and communicated by him in the September Number of 'The Ibis'*, I venture to send you the following extracts from my note-book, trusting that the interest of the subject will prove sufficient excuse for the rough form in which they are presented, especially as I consider that they clearly establish the fact of the parasitic habits of this bird, at least as far as Egypt is concerned. Last year I had the pleasure of presenting to the Zoological Society a young *C. glandarius*, taken by me from a nest of *Corvus cornix*; and this year, as will be seen from the subjoined notes, I have obtained, in repeated instances, both eggs and young birds from similar situations.

Jan. 20th. Near Thebes, shot two *C. glandarius* in a "sont"-grove, the female with ovaries very much developed. Seeing a nest of *Corvus cornix* in one of the trees of the same grove, I sent an Arab up, and obtained three eggs, two of *C. cornix,* and one much smaller and altogether different in size, shape, and colour, which he called that of the "Abou ghrāāb" (" Father of the Crow").

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* See Ibis, 1862, p. 357.

Jan. 27th. Three eggs of *C. cornix* and one of *C. glandarius* in the same nest, the young birds alive in the eggs. The difference in the position of the toes was distinctly visible in them. A female *C. glandarius* shot in the same grove. Another nest was brought to me, containing three young *C. cornix* and one *C. glandarius.*

Feb. 24th. Near Assouan (first capture), found three eggs of *C. cornix* and one of *C. glandarius;* and in the same grove obtained four young *C. glandarius,* all of different ages, from as many nests of *C. cornix.*

The same day, found two eggs of *C. cornix* and one of *C. glandarius.*

Feb. 25th. Near Kom Ombos, found two eggs of *C. glandarius* and one of *C. cornix,* in the same nest; and in another, three of *C. cornix* and one of *C. glandarius.*

March 2nd. Esnek. Two eggs of *C. cornix* and two of *C. glandarius* (from the same nest) were brought to me to the boat; and the same day I found two young *C. glandarius* in one nest, and two others in two other nests of *C. cornix.*

March 5th. Luxor. Found two eggs of *C. glandarius* and two of *C. cornix* in the same nest.

March 5th. Karnak. Two eggs of *C. glandarius* in two nests of *C. cornix.*

March 11th. Near Siout. Two young *C. glandarius* in nests of *C. cornix* (one of these is still alive, in my possession).

March 16th. Three of *C. cornix* and one of *C. glandarius* brought to the boat.

March 10th. Found an egg in a *C. glandarius* on dissection, nearly ready for exclusion, the measurements of which coincided with several of the above-mentioned eggs.

In colouring and markings these eggs present the same varieties as those described by the Rev. H. B. Tristram as found by him in Algeria.

I have not thought it necessary to particularize the instances where birds were shot, having met with them throughout the whole of Egypt, from Damietta to Assouan, and in one instance in Nubia, where, by-the-by, I have never met with *C. cornix*. I may further add, that this year the *C. glandarius* was more plentiful than last, and appeared to be a remarkably early breeder, as may be seen by reference to the dates.

I am, Sir, yours &c.,
J. H. Cochrane.

To the Editor of 'The Ibis.'

Genoa, June 5, 1863.

Sir,—My friend Mr. J. H. Cochrane having informed me of his intention of communicating to 'The Ibis' the results of his observations on the parasitic habits of *Cuculus glandarius,* I venture to trouble you, by way of supplement, with a few notes of my own on the same subject which I have been able to make since his return to Europe, and which, though they contain nothing fresh, are so entirely corroborative of his remarks, that I think we may consider the question fairly set at rest.

Being encamped for a few days near Dashoor (a village some 20 miles S.S.W. of Cairo), for collecting-purposes, about the middle of April of the present year, my attention was called to the presence of several spotted Cuckoos in a long line of "sont"-groves which extends along the edge of the desert, with slight interruptions, from beyond Dashoor to Abousir, a distance of some eight miles.

A close search after the nests of *Corvus cornix* was at once instituted, which was not altogether without success; for, out of fifteen or sixteen nests examined, four contained either eggs or young of *C. glandarius*.

I give the instances below in the order in which they were discovered; and may remark, that not only did I find all the nests myself, but divided with my Arab attendant the unpleasant task of ascending to them through a perfect *chevaux de frise* of long thorns, extremely painful to one's feelings.

April 16, 1863. Dashoor.

No. 1. Eggs:—1 *C. glandarius*; 5 *C. cornix*. No. 2. Young:—

1. *C. glandarius*; 3 *C. cornix*. No. 3. Young:—2 *C. glandarius*; 3 *C. cornix*.

April 20, 1863. Abousir.

No. 4. Eggs:—1 *C. glandarius*; 3 *C. cornix*.

In both instances where the eggs were hatched the young Cuckoos were much more forward than the Crows, being comfortably feathered, whilst the latter were still naked. Whether this proceeds from the egg of *C. glandarius* requiring less incubation than those of *C. cornix*, or whether the female Cuckoo lays in new, empty nests, has yet to be ascertained, though the fact that one Cuckoo's egg had the transparent appearance peculiar to freshly-laid eggs, whilst those of the Crow in the same nest had been laid some time, would seem to favour the former supposition. From the very first there is no possibility of mistaking the identity of the two birds, even without reference to the zygodactylic structure of the foot.

Only such nests appear to be chosen by the female Cuckoo as are built in the "sont"-groves; for we never found any in those built in isolated trees—rather a favourite position with *C. cornix*.

The *C. glandarius* has three distinct notes—the ordinary cry of the ♂, "Kee ou! kee ou!," a short, grating note of warning or alarm, uttered by the ♂ when disturbed, "Cark! cark!," and a kind of angry chattering, that of the ♀ which I have heard answering the first-mentioned.

During the same excursion, amongst other less important acquisitions, I obtained several eggs of *Bubo ascalaphus*, and a live ♀ bird caught on the nest, and two of *Pterocles exustus*, also with the ♀ bird.

I am, Sir, yours &c.,
S. Stafford Allen.

To the Editor of 'The Ibis.'

Sir,—It is pleasant to notice the flight of 'The Ibis' into the valleys of the Apennines and among the peaks of the Pennine Alps; and we welcome the notes of our first Italian contributor, Dr. Salvadori. May I hazard a conjecture on the Doctor's inference as to the existence of the Snow Bunting (*Plectrophanes nivalis*) as a permanent resident on the Apennines? Were it so, it would indeed be an extension of the summer range of this peculiarly Arctic bird. It is possible Dr. Salvadori's supposition may be correct; for Macgillivray, always careful and cautious, was inclined to believe in the probability of the Snow Bunting breeding on the highest tops of the Grampians. But, until verified by specimens, I should be disposed to doubt the nidification of this bird in so low a latitude, and to believe that the flocks observed, and called "Uccelli di Vetoro" by the natives, are not *Plectrophanes nivalis*, but the Snow-Finch (*Montifringilla nivalis*, Brehm), which does undoubtedly reside permanently both on the high Alps and the northern Apennines. The description given corresponds exactly with that of the Snow-Finch. I have before me a ♂ specimen of this bird shot by Lord Lilford, near Nice, pure white beneath, with the wings and tail white and black; and a ♀ shot by myself, on the Gemmi Pass, in July, with the under parts whitish, and the wings and tail white and brownish black. I have frequently noticed flocks of this species, in spring and summer, on all the Alpine passes, and in the month of November have met with a large flock on the crest of the Apennines, between Bologna and Florence, while I have never seen the Snow Bunting in those regions.

While acting critic, may I also suggest that I think Mr. J. T. Moggridge must be in error in stating that the males of *Saxicola cachinnans* and *S. stapazina* are at any season remarkably alike in colouring? I am well acquainted with both birds at all seasons of the year, and can assure that gentleman that I never, either in Europe, Asia, or Africa, saw *S. stapazina* assume any garb in the slightest degree approaching that of the Black Rock Chat. Perhaps he refers to *S. stapazina* and *S. albicollis* (sive *aurita*)?

I quite coincide with Mr. Moggridge's remarks on the Tithys Redstart, as I have long suspected that this bird is migratory only to a very limited extent. It certainly resides throughout the year in Greece, especially in the Mainote country (Laconia), where it is found most abundantly; and I have reason to believe that in our own country it is a permanent resident among the wilds of Dartmoor. I have found it numerous and vigorous when the hills have been covered with snow. A local naturalist at Torquay, who has numerous specimens, assures me that he can find it on Dartmoor throughout the year.

Again, as regards the Rock Martin (*Cotyle rupestris*, Boie), though I am aware that writers on ornithology put it down (perhaps from analogy) as a migrant, I have not been able to ascertain any satisfactory proof of this habit. Mr. Moggridge bears testimony to its winter residence at Mentone; my friend Mr. Simpson assures me it spends the winter where it breeds, at Missolonghi in Northern Greece. I have seen it myself all the winter in the rocky gorges of the Morea, among the hills and rocks of Judæa, and throughout the Atlas range of North Africa, where I have noted it during every month from September to July*. On the other hand, I have been unable to ascertain satisfactorily a single locality where it is found *only* in summer. I trust that your world-wide contributors will soon be able to clear up these and all other doubtful points in the history of our bird-fauna.

I am, Sir, yours &c.,

H. B. TRISTRAM.

Grantham, 15th April, 1863.

To the Editor of 'The Ibis.'

SIR,—I send you the following note on *Accipiter gularis* of the 'Fauna Japonica,' and *Accipiter virgatus* of Temminck.

In Mr. Swinhoe's interesting paper on the Ornithology of Formosa, published in the last Number of 'The Ibis,' reference is made, in page 213, to an opinion which I expressed that the above two species might prove identical.

I have subsequently had the opportunity of consulting Prof. Schlegel's description of the two species in the first part of his valuable Catalogue of Birds in the Leyden Museum, and, after doing so, I have very little doubt that this opinion is erroneous, and that the learned Professor is correct in considering the two species as distinct.

The specimen obtained by Mr. Swinhoe in Formosa, being immature, cannot be identified with certainty by any distinctive marks of coloration in plumage, these being only found in the adult birds; but its measurements agree with those of *A. gularis* as given by Prof. Schlegel in the work above cited, p. 33.

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* It is also a permanent resident on the Rock of Gibraltar. See our remarks on this bird in "Vacation Tourists," 1861, p. 205.—ED.

I am, Sir, yours &c.,
J. H. GURNEY.

The following extract is from a letter addressed to the Editor by Mr. Elliott Coues:—

"I am sorry that you laid so much stress upon what I said regarding the *range of habitat* of *Larus smithsonianus* as an argument in favour of its separation from the European *L. argentatus.*

"I most fully agree with you that no species should be separated from another unless it can be diagnosed without knowing the locality whence it comes; in short, that morphological and not geographical differences should be the data upon which to found species. I think, however, that RANGE may, in some instances, justify us in separating specimens which show, in EVERY EXAMPLE, an amount of difference which could not be regarded as specific were the birds shot out of the same flock or in the same particular locality; but this is the extent to which I would allow geographical range to influence my opinion. In the case in point, viz. that of *Larus smithsonianus,* perhaps I weakened my argument for its specific distinction by referring at all to range of habitat. I attach but very little importance to that fact, and inserted it upon Prof. Baird's suggestion, merely as one reason WHY *we might expect to find* the distinctive characters which really do exist."

To the Editor of 'The Ibis.'

April 27, 1863.

SIR,—Among some skins with which I have been lately favoured by Mr. Bartlett, the superintendent of the Zoological Gardens, are some bearing labels in the handwriting of my late friend Dr. Kelaart. Among them are those of a pair of Woodpeckers, male and female, marked "*Brachypternus ceylonus,* from Newera Elia." They are, however, of a different species and genus, and new to the fauna of Ceylon, being apparently quite identical with the *Chrysocolaptes hæmatribon* of my catalogue,

p. 55, where I referred to what I supposed to be a Philippine specimen obtained at the dispersal of the former Macao Museum. In the crimson colouring of its entire upper parts this species resembles the *Brachypternus ceylonus,* and bears a similar relationship to its Indian congeners, the different orange-backed Woodpeckers appertaining to the genera *Chrysocolaptes, Brachypternus,* and *Chrysonotus* (v. *Tiga*). In like manner, certain other birds are of a deeper or darker hue in Ceylon, e. g. *Corvus splendens* and *Acridotheres tristis*; but the *Hypsipetes* of Ceylon is more like *H. psaroides* of the sub-Himalayan region than the darker *H. ganeesa,* Sykes (v. *unicolor,* Jerdon), of S. India. We know, however, comparatively little of the special ornithology of the extreme south of the Indian peninsula, where a nearer approach to certain Cinghalese modifications may yet be proved to occur. In the Tenasserim provinces, I remarked that the common House Maina (*Acridotheres tristis*) was dark-coloured, as in Ceylon; and the familiar Crow of all that region, from the valley of the Irawádi to beyond Ava, southward to Mergui, is even darker than the Cinghalese variety of *C. splendens,* and moreover has a much shriller ordinary caw, which is a more remarkable distinction. Otherwise the Burmese Crow exactly resembles the Indian *C. splendens,* except that the grey of the plumage must be looked for to be observed at all, and then appears very faintly. At Akyab the regular Indian *C. splendens* is numerous, and has spread to Kyuk Phoo; but elsewhere in Arakan there is only the *C. culminatus,* the range of which extends southward down the Malayan peninsula at least as far as Malacca, and this is probably the supposed *C. corax* of Raffles's list of the birds of Sumatra. The black and shrill-voiced race of *C. splendens* does not appear to inhabit the Malayan peninsula; at least it is not found in Penang, Malacca, or Singapore, and, like the corresponding ordinary Crow of India, it only occurs where there is a dense human population. But in Malacca, or its vicinity, is found the *C. macrorhynchus,* Vieilliot, a very distinct black Crow, which Mr. Moore has lately described in the Catalogue of the late India-House collection by the name *C. tenuirostris,* and under the supposition that it had been killed in Bombay! I have seen the skin described by Mr. Moore (which remains unmounted among the ornithological stores of the British Museum), and recognized at a glance the mode of preparation so characteristic of skins received from Malacca, with which I myself and others have long been familiar. Unquestionably the species has no claim to a place in the Fauna Indica. In 'The Ibis,' 1862, p. 325, I observe *C. macrorhynchus* of Temm. and Schlegel placed as a synonym of *C. japonensis*, Bp.; but this, as "from its size it may be classed as a Raven," must be widely different from the Malayan bird long previously named *macrorhynchus* by Vieillot.

E. Blyth.

A few Corrigenda for 'The Ibis.'

When I left India in December last, I had seen no 'Ibis' later than No. 13. I now submit a few notes, chiefly corrigenda, relative to the subsequent issues.

Ibis, 1862, p. 193, line 4 from bottom of page,—and again, p. 194, lines 2, 7,—and p. 388, line 13 from bottom, read "Yonzalin (or Yoon-za-Leen)."

P. 194. *Cypselus vittatus* has since been received from Moulmein, where it was obtained by Major S. R. Tickell.

P. 257. The formerly supposed *Saxicola leucura* of India, referred to by Mr. Swinhoe, is *S. opistholeuca*, Strickland, figured in Sir W. Jardine's 'Contributions to Ornithology.'

P. 387, line 10, for *Falco "cherrug"* read *"F. jugger;"* and line 22, for "female" read "male."

P. 390, line 1, for "belly" read "bill."

Ibis, 1863, p. 1, *note*. *Palæornis alexandri* proves to be common in the Andaman Islands.

P. 4, line 16. The Ya-ma-doung range of mountains separates the seaward province of Arakan from that of Pegu (or the valley of the Irawádi).

P. 5, line 13. By "Indo-Chinese countries" I mean those lying eastward of the Bay of Bengal, or the Trans-Gangetic peninsula. I observe that the term is also employed to designate the Himalayan and Chinese mountain territories.

P. 20, No. 65. *Buteo canescens* is referred by Mr. Gurney to *B. ferox*, S. Gmelin, v. *rufinus*, Rüppell, and *B. leucurus*, Naumann.

P. 20, No. 66. *Buteo rufiventer*, Jerdon, is referred by Mr. Gurney to *B. cirtensis* of the 'Exploration de l'Algérie' (*vide* Ibis, 1862, p. 362). I have seen but one Nilgiri specimen, which is in the Calcutta Museum. This might well pass for one of the many individual varieties of *B. vulgaris*, and numerous examples from the N.W. Himalaya, several of which are in the same collection, I consider to be unmistakeably *B. vulgaris*.

P. 31. Is not *Hemerodromus* identical in form with *Cursorius bicinctus*, to which the generic name *Rhinoptilus* was given by Strickland?

P. 33. To the Arabic, French, and Latin names for the "*Herodias bubulcus*" add the Hindustáni appellation *Gai Bogla* (literally "Cow Heron"), corrupted into *caboga* by Pennant, undè *Ardea caboga*.

P. 212. Prof. Schlegel's idea of the merely seasonal appearance of the occipital crest in *Spizaëtus* is altogether a mistake. Neither is the crest of these birds characteristic of any particular age.

P. 217. Mr. Swinhoe fancies that I had only compared his "*Scops semitorques*" from Foochow with Himalayan specimens of *Scops lempiji*. There are numerous examples of this bird in the Calcutta Museum from S. India, and also from Malacca. These exhibit slight local distinctions which are difficult to understand—equally great with any presented by the Foochow bird.

E. Blyth.

Brigmeston House, near Amesbury, Wilts,
April 30th, 1863.

It will no doubt be in the recollection of some of our readers, that in our first volume (Ibis, 1859, p. 415) we announced that the late Mr. J. D. Salmon had bequeathed his valuable cabinet of Eggs to the Linnean Society, and we expressed a hope that it would be there preserved intact. Our information has proved to be correct; but the result of the affair has, unfortunately, turned out very different from what we anticipated. It was intimated to the Council of the Society, shortly after that gentleman's death (which took place on the 5th August, 1859), that the bequest was conditional, and the stipulations required by his administrators being such as the Society could not accept, some delay took place in the transfer. About a year and a half afterwards, the wrapper of this Magazine contained a notice that on the 23rd April, 1861, and following day, "a superb and unique collection of British Birds' Eggs, belonging to the Museum of a late celebrated physician," would be sold at Mr. Stevens's rooms. When the catalogue of this sale came out, it was pretty evident that its compiler had had access to Mr. Salmon's papers. The catalogue purported to include very many eggs (some of them most valuable specimens) which were *well known* by several of our supporters to have been in Mr. Salmon's possession a short time only before his decease. These were, however, interspersed with others, the histories of which, as there given, were so manifestly untrue as to render it plain that the writer was guilty of crass ignorance as an ornithologist, even if they did not suggest the possibility of something worse. We made some inquiry of our friend Mr. S. Stevens respecting this sale. He frankly told us that all he could say was, that the person who communicated with him respecting it professed to be acting under the directions of the executors of the late Dr. Martin Barry, F.R.S., who was certainly entitled to the designation of a "late celebrated physician." On further inquiry in another quarter, we were told that the presence in the sale of so many eggs known to have once been Mr. Salmon's property was to be accounted for by the fact that Dr. Barry had received them in exchange from that gentleman! Now considering that some of these, unmistakeably described as they were in the catalogue, were specimens so valuable that it was impossible to suppose Mr. Salmon would ever have willingly parted with them, we thought the story a lame one, but with it were fain to be content. Some time after, hearing that Mr. Salmon's collection had been actually handed over to the Linnean Society, and was to be seen in their rooms at Burlington House, we went thither, and found that all its choicest rarities had been removed, and their places supplied by most palpable forgeries or worthless substitutes. It then became plain that an extensive fraud had been perpetrated by some one. But no remedy could be suggested, and we did not see that any advantage was to be derived from adverting to the circumstance. However, within the last few weeks, an announcement has again appeared in the public prints that a collection of British Birds' Eggs, the bulk of which "was formed by Dr. Martin Barry," would be sold at Mr. Stevens's on the 6th and 7th May. The catalogue of this sale was evidently from the same pen that had indited the previous one we have noticed, and we feel it incumbent upon us to denounce it as one of the grossest cases of attempted imposition we have ever heard of. We say "attempted," because we believe that the knowledge of many collectors in the rooms at the time of sale prevented their being taken in; but with some of our less experienced brethren we fear the case may have been different. We can only hope that our now drawing attention to these facts will prevent any recurrence of the fraud, should such a thing be contemplated; and further, that Mr. Stevens will not hesitate to decline all future dealings with persons who are likely to bring so much discredit on a long-established business, which we believe has hitherto been conducted with entire good faith. It may be an unpleasant act for him to perform, but he may rely upon our full sympathy; and we are sure that all honest ornithologists, both amateurs and professionals (to each of which classes his constant sales are matters of so much convenience), will support him in his refusal. It only remains for us to say that not the slightest reliance is to be placed upon any one statement contained in either of these catalogues, unless it be elsewhere corroborated by other evidence; and that the scientific value of what is called Mr. Salmon's Collection of Eggs, in the apartments of the Linnean Society, is exactly nothing at all.

We have received the following letter from a correspondent, who signs himself "Oophilus," relating partly to the same subject:—

Sir,—It has ever been the fate of true science to be attended by the false maiden who travesties her every step and parodies all her discoveries. The astrologist has mocked the astronomer; chemistry has been persecuted by the alchemist. Though her loftier sisters have been haunted thus, yet oology, that modest offshoot of embryology, might have hoped to escape. On her behalf I must crave permission to enter a protest against the treatment to which she has been exposed. I could say much on the injudicious and reckless course of many of her sincere friends, whose free handling of many a waning species contrasts painfully with their tender manipulation of the eggs "*in situ*" (in their cabinet), whose bribes imperil the continuance in our island of the royal Eagle, and corrupt the morals of the once-faithful guardians of the Scottish forests. It is indeed painful to see the generous efforts of princely proprietors to preserve the last relics of a royal race thus baffled. One almost shudders at the ruthlessness with which a scientific friend can relate the feat of his having "harried" two Golden Eagle nests on the same day. While I fully admit the interest and value of an indigenous collection, and believe that the value of oology, as a branch of ornithic embryology, in determining the divisions of genera and the affinities of species, is scarcely yet sufficiently acknowledged by naturalists, I must denounce as not only useless, but mischievous, the inordinate craving after a long series of British-taken specimens of our rarer birds. We all deprecate the achievements of the gunner who stalks behind a hedge after every rare bird in his neighbourhood, and then chronicles his exploits in the pages of the 'Zoologist.' Is the indefatigable "British-egg" collector a less mischievous depredator?

I can only hope that Mr. Fenwick, who has cast his protecting arms round the grilse, will, when he has secured to our fish-spawn the rest he promises on its own river-bed, devote his kindly sympathies to the homes of our native birds. I can fully comprehend, for I participate myself in the enthusiasm of the friend who exclaimed, on being asked his opinion of a somewhat variable egg, "I do not profess to understand an Eagle's or an Osprey's egg unless I see a drawerful;" but can we not, when the identity of the species is indisputable, content ourselves with supplying our series from regions where there are enough and to spare?

Enough as to the indiscreet zeal of the true naturalist. There is another and larger class, the mere collectors, who gather eggs as they might accumulate old china or postage-stamps, to as little use and with as little scientific intent, and yet, sometimes, develope into practical naturalists. These are the victims of a system of imposture as gross, and far less ingenious than the fictitious antiquities of Italy and Egypt; and it is this system which has provoked my present letter. In oological beyond all other collections, dealers' specimens are most unsatisfactory; and from long acquaintance with the frauds of the trade, I would urge upon every young collector never to admit into his cabinet an egg purchased from a dealer. They are rarely genuine, scarcely ever authentic. It is true, valuable specimens may sometimes be thus obtained; and we have heard of the Great Auk's egg turning up in a London bazaar, and even under the shadow of St. Clement's Danes, though, as to the latter instance, we should be sorry here to trace the previous history of the treasure. In most other branches of natural science, the specimen carries with it the guarantee of its genuineness; not so in oology. Here, not only the authenticity, but, in very many instances, the genuineness also must depend upon testimony alone. It is to our late valued friend Mr. Wolley, and to his worthy colleague and successor Mr. A. Newton, that naturalists are indebted for the scrupulous care and rigorous investigation with which our best collections are now formed. But as the progress of art has rendered the forgery of bank-notes not more impossible, but more ingenious, so the success of the principles these gentlemen were the first to promulgate has evoked a more elaborate system of imitation. Mr. Wolley's Sale Catalogues, each of them almost a synopsis of the nidification of the birds of Lapland, are well known to all of us. Their repute has, it seems, brought unworthy imitators into the field. I have before me two catalogues of sales in London, during the present month, which charmingly illustrate the simplicity supposed to exist among mere collectors.

The first is a catalogue of a "valuable and authentic collection of British birds' eggs." The list is a very complete copy of Yarrell's Index, but does not descend into particulars more definite than "Norway," "Lapland," &c. Suffice it to say, that the egg of the Cirl Bunting is stated to have been taken in Greenland; and that those of the Sanderling, Sabine's Snipe, Brown Snipe, Knot, Curlew, Sandpiper, Red-breasted Goose, Smew, and Steller's Western Duck are all inserted in their proper places. Not even the Ivory Gull is wanting. We can only hope that the buyers of these rarities will not feel any scepticism on the part of their friends as to the value of their purchases to be a personal insult.

But the first catalogue is simple and uncircumstantial. We now come to the second. This is a well-printed pamphlet of 36 pages, a neat imitation and enlargement of one of Mr. Wolley's, containing an amount of information on the geographical distribution of British birds which is positively startling. We commence with an egg of the Egyptian Vulture, taken in Guernsey, followed by that of an Osprey, which we would rather have seen in its former home in Mr. Salmon's collection, reposing in the peaceful stillness of the Linnean rooms. Then there is a Hobby's egg from Alnwick, *said to have been* T. Bewick's. Perhaps the connexion is attained by the consideration that Bewick and Alnwick are both Northumbrian, which the Hobby as certainly is not. Then we have three of the same articles from the Isle of Arran, which no sceptic can doubt; for the date is given as June 4, 1847; and that must be proof! Further north still we go, and discover the novel fact that Goshawks breed in Caithness, verified again by the exact date and locality. We return to Arran, and find there the Rough-legged Buzzard breeding year after year; and as a further proof thereof, we are told that Mr. Salmon once offered £5 worth of eggs in exchange for a specimen from this lot. Again, we find, after picking up the Swallow-tailed Kite in Mexico, Montagu's Harrier laying eggs at Alnwick, where no Northumbrian ever met with it. Indeed, Arran and Alnwick seem the favoured resorts of these phenomena, and Mr. Newton's injunctions as to marking the date and place of capture on each specimen have been faithfully obeyed. The capture of a Snowy Owl's egg at Anhalt, on the 5th of June, would indeed have been news to Mr. Wolley. But it is really a waste of time to examine in detail this romance of ornithology. It is enough to say that among the birds breeding in Arran are mentioned the Scops Owl, Richard's Pipit, Three-toed Woodpecker (*Apternus tridactylus*—not yet a British bird), Turtle-Dove, Turnstone, and last, but not least, Steller's Western Duck!! Guernsey supplies us with the Calandra Lark; Portugal, with White's Thrush; the Isle of Ushant, with Macqueen's Bustard; Norway, with the Curlew Sandpiper; Uist, with the Red-throated Pipit, Pectoral Sandpiper, and Great Northern Diver. Several pairs of the Two-barred Crossbill have bred at Loch Fyne, to say nothing of the Jack Snipe; while we are offered the Brown Snipe (*Macrorhamphus griseus*), with the bird that laid the eggs, from Pwllheli in North Wales! Many additions to the British fauna are presented for the first time, Arran enriching our list with specimens of *Circaëtus gallicus* and *Sterna tenuirostris*. The catalogue is appropriately wound up with the egg of the Bimaculated Duck, from Siberia, and the travelling-case in which all these prodigies were exhibited to the wondering gaze of Dr. Thienemann.

These instances may suffice to show the sort of verification which is offered to the purchasing collector. Although no naturalist could be thus imposed upon, it may not be useless to urge upon the readers of 'The Ibis' the importance of endeavouring to infuse healthier principles into the minds of their collecting friends, and remembering that truth—truth for its own sake—is the one aim and object of the naturalist, to denounce all shams, all indulgence of the passion for merely amassing, and to let their cabinets, as well as their studies, be like Cæsar's wife.

I am, Sir,
Your obedient Servant,
OOPHILUS.

During the past month numerous instances of the occurrence of Pallas's Sand-grouse (*Syrrhaptes paradoxus*) in this country and the neighbouring parts of the Continent have taken place. One of our most valued contributors has promised us an account of this new immigration from Tartary for our next Number.

THE IBIS.

No. XX. OCTOBER 1863.

XXXII.—*The Ornithology of Formosa, or Taiwan.*

By Robert Swinhoe, Esq., F.Z.S., &c.

[Concluded from p. 311.]

82. Alauda cœlivox, Swinhoe.

Throughout the plains, the downs, the grassy plateaux, wherever the locality is suitable in Formosa, this little Lark is found, delighting the ear of the savage, the colonist, and the adventurer alike with its sweet song as it disappears into the sky. But it often also sings on the ground, or mounted on some stone or prominence. In the Pescadore Islands, between Formosa and the main, it is also very common, and almost the only bird there. It is abundant in the south of China, from Canton to Foochow. In Shanghai it is replaced by a similar form, but intermediate in size and proportions between it and the so-called *A. arvensis* of Peking and its neighbourhood. In my large series of skins from Formosa there is considerable variation in the length and thickness of the bill, some, in the bulkiness of that organ, drawing close to the *Mirafræ* of Africa and India. For a more detailed account of this bird I must refer my readers to the 'Zoologist.'

83. Emberiza spodocephala, Pall.

E. melanops, Blyth.

Euspiza personata of my Amoy List, Ibis, 1860, p. 62.

These Buntings visit Formosa in winter in large numbers. They are identical with those procured at Amoy, and are referable to the Siberian species described by Pallas, with the greyish olive throat and breast, and black ring round the bill, in mature plumage.

84. EMBERIZA SULPHURATA, Schleg.

This is also a winter visitant, but by no means so common as the last.

85. EMBERIZA AUREOLA, Pall.
86. EMBERIZA FUCATA, Pall.
87. EMBERIZA CIOIDES, Temm.

Winter visitants; not common.

88. FRINGILLA SINICA, L.

A resident species; somewhat rare. Its nest and eggs are not unlike those of the Goldfinch (*Carduelis elegans*).

89. PASSER MONTANUS, L.

The prevailing House-Sparrow, as in China. Its eggs are very variable, even in the same nest, as to colour, size, and shape.

90. PASSER RUSSATUS, Temm. & Schleg. Faun. Japon. p. 90, pl. 50.

Specimens received from the hills. Bill black; legs yellowish brown, with brown claws. These birds from Formosa are identical with skins from Japan in Capt. Blakiston's collection, and with others from Canton in mine. I was some time under the impression that the Russet Sparrow of Japan was identical with *P. cinnamomeus*, Gould, from the Himalayas; but, on referring to the British Museum, I find that the Cinnamon Sparrow, as well as a closely allied species, *P. flaveolus*, Blyth, have the under parts yellow, whereas those parts in our bird are whitish. I have no longer any doubts as to the distinctness of the species. This bird has rather a wide distribution in Eastern Asia, extending throughout the hilly parts of China, from Canton to Shanghai, and perhaps further north. It occurs, as we can testify, in the hilly parts of Formosa, and most probably throughout the Japanese islands, as we have seen it from two extreme parts, Nagasaki and Hakodadi. In places where it occurs, it is a shy bird, frequenting retired spots on the woody hills, and nesting in holes of trees. In fact, as regards its habits it may be called the Tree-Sparrow of Eastern Asia, the true Tree-Sparrow (*P. montanus*, L.) of Europe having there usurped the position of the House-Sparrow (*P. domesticus*), which does not occur.

♂. Upper parts bright cinnamon-red, with a few long black spots on the back. Under parts smoke-grey, whitish on the cheeks, and ochreous on the belly and vent. Throat black, as also space between the eye and bill; a thin streak of white runs from the bill over the eye. Lesser wing-coverts white; greater coverts and tertiaries black, with reddish-white tips and margins; quills dark brown, edged with reddish white, more deeply on the basal exterior of some of the primaries, where it forms a bar. Tail and its coverts brown, tinged with olive, their margins being light.

Length $5\frac{2}{8}$ in.; wing $2\frac{6}{8}$; tail $1\frac{7}{8}$; expanse $8\frac{2}{8}$. Legs pale flesh-brown, tinged with yellow, especially on the soles. Bill black. Iris deep blackish brown. Gizzard round and muscular, about $\frac{1}{2}$ inch in diameter, flattened; epithelium well furrowed and yellow. Intestines 7 in. long; the cæca situate about $\frac{1}{2}$ in. from anus and $\frac{1}{10}$ long.

The female of this species I was not successful in procuring either from China or Formosa; but, from specimens in the Leyden Museum from Japan, I observe that it differs considerably from the male in a manner analogous to that which obtains in *P. domesticus*. I believe *P. montanus* stands alone in the peculiarity of having similarly clothed sexes.

91. MUNIA ACUTICAUDA, Hodgs. As. Res. xix. p. 153, 1836.
M. muscadina, Gould.
M. molucca of my Amoy List, Ibis, 1860, p. 61.
M. minima of my Canton List, Ibis, 1861, p. 45.

I have specimens of this bird from Canton, Amoy, Shanghai, and Formosa. These I have carefully compared with Hodgson's examples from Nepal and others from Tenasserim, and found them identical. In Formosa this is an abundant resident species, being met with in all plantations throughout the low country in small parties. It is a lively little bird, constantly moving about its perch, whisking its pointed tail from side to side, and uttering a rather musical trill-note. It generally prefers selecting a building-site in the neighbourhood of human dwellings, placing its Wren-like nest in some bush five or six feet from the ground, often in quite exposed places; but being such a small, delicate bird, and so gentle and familiar in its habits, it is protected by the Chinese, and looked upon as the harbinger of good. It is known in Amoy as the *O-pe-la*; in Formosa, as the *Aw-tsew-pe-la.* In its disproportionately large and not very elegant nest it seldom lays more than three eggs, quite white when blown, but when fresh, of a pale ochreous pink. The males and females are similar in plumage; the young are of a light olive-brown, whitish on the under parts, but always having the white rump-band.

This species has been semidomesticated in Japan, where it breeds, like the Canary, in confinement, and produces every variety of albinism and melanism. There are several living examples of these varieties at present in the gardens of the Zoological Society of London.

M. molucca (L.) and *M. striata* (L.) are closely allied to this species, but distinct.

92. MUNIA TOPELA, n. sp. Chinese, *Topelá.*

M. malacca of my Amoy and Canton Lists, Ibis, 1860, p. 61. & 1861, p. 45.

The two species to which this bird is most nearly allied are the *M. punctularia* (*Fringilla nisoria,* Temm.) of Malacca, and the *M. undulata* of India. The former is distinguished from the latter by the whitish grey on the rump, upper tail-coverts, and tail, which is represented by glistening fulvous in the other species. In ours the upper tail-coverts are greenish yellow, and the tail washed with yellowish green. The upper parts are a dull brown, instead of reddish chocolate, most of the feathers having whitish shafts, and being obscurely barred with a deeper shade of brown; the rump-feathers margined with yellowish white. Throat deep chocolate-brown, not reddish. Horseshoe-shaped striæ on the breast light chocolate, those on the flanks dull blackish. Centre of belly white; vent and tibiæ the same, mottled with brown. Axillaries and underwings tinted with ochreous. The two central tail-feathers in adults prolonged and pointed. Bill deep bluish grey, approaching to black. Legs and toes light purplish lead-colour, with pale brownish soles; claws flesh-brown, with light edges. Iris chocolate-brown. Length $4\frac{9}{10}$ in.; wing $2\frac{1}{10}$; tail $1\frac{8}{10}$, of 12 feathers, the outer one shortest and not so pointed as the rest, the next four graduated slightly, the two central pointed, and by about $\frac{2}{10}$ in. the longest.

The young have brown bills. Rictus white; inside of mouth yellowish flesh-colour. Their legs are flesh-coloured. Their tail-feathers are of the same length and form as those of adults. Their upper parts are of a uniform light yellowish brown. The under parts a much lighter tint of the same colour, the centre of the belly being white. Quills dark hair-brown. Skin round the eye greyish brown; iris blackish brown. In the early spring the horse-shoe feathers of the under parts begin to show themselves, but it is seldom until the second year that the moult is complete.

Mr. Blyth considers this species distinct; and in my large series of skins I find constant uniformity in the peculiarities that distinguish it from its allies. In China it is abundant from Canton to Shanghai, and in Formosa all throughout the plains. It is more a bird of the open country than the last, roaming about in autumn and winter in large flocks, like Sparrows and Linnets. It also rarely goes into the retirement of woods and groves for nesting-purposes, preferring isolated trees, bushes, or palms, in the exposed open fields. In one of these its nest is stowed away—a large woven mass of coarse dried grass, generally lined inside with finer materials. It is of a globular form, with a hole on one side, resembling the nest of some murine animal. The eggs number 7, 5, or 3, but more frequently 3. They are white, oblong, larger than those of the last species, and not so narrow. It has usually three nests in the season. The notes of this bird are louder and somewhat different from those of the preceding species. It is also a heavier and more Sparrow-like bird. It is often kept in confinement. When singing, the male draws himself up to his full height and stretches out his head, the beak is opened, and the throat shaken; but only a low murmuring sound is emitted, which is scarcely audible to a person standing close to the bird: it is the most absurd attempt at singing that ever I witnessed; and yet it draws forth the admiration of the females; for while he is so engaged, numbers draw round him and bend their heads forward to listen.

93. HETERORNIS SINENSIS.

Oriolus sinensis, Gm.

O. buffonianus, Shaw.

Pastor turdiformis, Wagler.

Sturnia cana, Blyth (the young).

This summer visitant to South China winters in Pegu. In its summer migrations the neighbourhood of Amoy appears to be its northern limit; for it is not found in Foochow. It is not a regular visitant to Formosa, a few only straggling to the south-west coast, about Apes' Hill, in autumn and spring. These do not stay, but leave again so soon as their strength and the weather permit.

94. STURNUS CINERACEUS, Temm. Pl. Col. 563; Faun. Japon. pl. 45.

This species visits our Formosan plains in large flocks at the end of October and beginning of November. These range about the country, feeding largely on the figs of the Chinese banyan. In spring they all return northerly. On the south coast of China they are also winter visitants, retiring to Mantchuria and Japan to breed. This species and the *S. sericeus*, Gmel., are closely allied in form and habits, and appear to link the small *Heterornis* group of Starlings with the true *Sturnus*.

95. ACRIDOTHERES CRISTATELLUS, L.

Pastor philippensis, Temm.

This is doubtless the bird described by Linnæus from specimens brought home by Osbeck from Canton; but the name has, unfortunately, by later ornithologists been applied to numerous cognate forms. In China our bird abounds from Canton to Shanghai. It is common in the level country of Formosa, and, I believe, occurs also in the Philippines. I have compared my specimens from Formosa with some from China, and found them identical. It is, like the Sparrow, of very domestic habits, being partial to the haunts of man, and frequenting the roofs of houses and temples. The Chinese entertain a great love for it, and often confine it in cages. It learns to speak, and imitates well the human voice. It builds in the holes of trees or walls, but more frequently constructs a large-domed Magpie-like nest on the tops of high fir trees. Its eggs are blue, and vary from three to seven in number. It bears the general name of *Pako,* or "Eight Brethren" (it being usually seen in parties of that number); but the Amoy provincial name is *Ka-ling.* It abounds in Formosa all throughout the year.

A young bird procured 18th July 1861, at Taiwanfoo, had the bill pale yellowish horn-colour. Roof of mouth, inside of bill, and tip of tongue yellow; the rest flesh-colour, with a bluish-black tinge. Iris light greenish yellow. Legs light brownish yellow on the under parts, sole, and joints of scales; the rest purplish brown, darker on the claws. The nose-crest scarcely perceptible. The feathers of the head and under parts edged with brown, and the rest of the plumage more or less tinged with the same. Outer tail-feathers and under tail-coverts tipped, not with white, but with dusky yellowish brown.

96. CORVUS SINENSIS, Gould.

In the south-west plains of Formosa I observed no Crow; but in the interior hill-ranges, near Tamsuy, I noticed parties of a black species, which, from its peculiar voice and habits, I took to be the species that is found throughout China. Unfortunately I did not procure a specimen, owing chiefly to the great objections the natives had to shoot them. The Chinese colonists there look upon this bird with a kind of superstitious reverence; "for," say they, "whenever the savages sally out and kill any of our number, this Crow always sets up a sympathetic *laou-wa* (or wailing cry)." I asked them if the Crow was not always setting up this cry, whether any mishap had happened to them or not. In reply to this, they shrugged their shoulders and laughed, as they always do when the follies of their superstitions are pointed out to them, but they do not believe in them the less for that.

97. PICA MEDIA, Blyth.

P. sericea, Gould.

Observed in great abundance in the large level tracts near

Taiwanfoo, where it is a resident species, but rarely in the hilly parts of the North-west. It is identical with the race that occurs throughout China and Japan.

98. Urocissa cærulea, Gould, P. Z. S. 1862, p. 282.

Soon after my arrival at Tamsuy, some hunters that I had sent into the interior returned with the two long tail-feathers of a beautiful bird which they said they had shot, but were obliged to eat, as, owing to the heat of the weather, it was getting tainted. They called it the *Tung-bay Swanniun*, or Long-tailed Mountain-Nymph. I saw, from the peculiar form of the feathers, that the bird from which they had been extracted must have been a *Urocissa*, and, from their bright blue tint and large white tips, I felt sure they belonged to some fine new species. I was much excited, and offered large sums for specimens, and consequently soon received an ample supply, which fully confirmed my belief that the Formosan *Urocissa* was a peculiar and beautiful form.

The Mountain-Nymph is by no means an uncommon bird in the large camphor-forests of the mountain-range. It is there to be met with in small parties of six or more, flying from tree to tree, brandishing about their handsome tail-appendages, and displaying their brightly contrasted black-and-azure plumage adorned with white, and their red bill and legs, among the deep foliage of the wood. They are shy birds, soon taking alarm at the approach of a stranger, giving warning to each other in loud notes, and then gliding away one after another with a straight flight into an adjoining tree (the flight being executed with short quick flaps of the wing, while the body and tail are held nearly horizontal). They feed on wild figs, mountain berries, and insects, chiefly Melolonthine Coleoptera. I had no opportunities of observing the nesting of this bird, nor the plumage of the young, which in the *U. sinensis* differ considerably from that of the adult.

In the large size and bulkiness of its bill, this species is more nearly affine to the *Urocissa magnirostris* of Tenasserim than to *U. sinensis* of China; but its tail is shorter than that of either, and its plumage is entirely different to the similarly distributed tints of the four other described species.

Note on a female shot 27th March, 1862.—Length $20\frac{1}{2}$ in.; wing $7\frac{5}{10}$; tail $13\frac{3}{4}$; tarse $1\frac{5}{8}$. Bill and legs bright red lead, the former tipped paler; sole-pads light and dingy; claws light reddish brown. Inside of mouth flesh-colour; tongue broad and fleshy; apical $\frac{2}{10}$ths horny and ochreous, terminating obtusely with cilia a little turned up. Iris clear light king's yellow, somewhat pearly in appearance. Ear-covert nearly as large as the eye, with an operculum small and almost central. Eyelid thick, blackish brown, with a narrow outer rim of orange lead-colour.

The ovary contained numerous partially developed eggs; the oviduct was well developed. Right lobe of liver $1\frac{4}{10}$ in.; left $1\frac{2}{10}$. Œsophagus $\frac{1}{2}$ inch wide, enlarging into the proventriculus, which gradually distends as it descends. Stomach an irregular oval, somewhat flabby, and not very muscular, $1\frac{3}{10}$ in. long, by 1 broad, and $\frac{1}{2}$ in. deep. Epithelium somewhat thick, furrowed widely in all directions; containing a small Melolonthine beetle, a large berry-seed, and remains of banyan-figs. Cæca about $\frac{4}{10}$ in. long, and $\frac{1}{10}$ thick, one placed a little higher than the other, and distant about $\frac{3}{4}$ inch from the anus. Intestine $14\frac{1}{2}$ in. long, thick and fleshy, varying in thickness from $\frac{3}{10}$ to $\frac{6}{10}$.

The male has a larger bill, and somewhat longer wings and tail, than the female; but both sexes vary a good deal in proportions *inter se.* In the older specimens the *tomiæ* of the upper mandible are often worn into a serrated appearance.

Entire head, hind neck, throat, and breast black. General plumage dusky purplish azure, duskier on the under parts. Wings brownish black, the outer webs of primaries and secondaries and the greater part of the tertiaries being of the same colour as the back, a large white spot at tip of each quill, becoming smaller and obscure as the last primaries are reached. Underwings washed with rufous. Upper tail-coverts broadly margined with black, preceded by a whitish shade, and in some cases tipped with a white spot; these feathers have a beautiful appearance. Tail consisting of twelve feathers; the two central ones somewhat spatulate at the end, with turned-up sides, the *spatulæ* white, the remaining portions of the two feathers purplish azure, with black shafts; the 2nd tail-feather with a much smaller white spot, preceded by a broad black band, the black increasing in extent on the other lateral feathers. Vent pale, broadly tipped with a pale glowing rufous tint. Undershafts of wing and tail-feathers ochreous, the underside of the white tips being washed with a pale rufous glow.

99. Garrulus taivanus, Gould, P. Z. S. 1862, p. 282.

This small mountain species represents, in Formosa, the Jay that frequents the hill countries of South China, from Canton to Ningpo, *G. sinensis*, Gould. The Formosan Jay has a comparatively larger bill, and is at once distinguishable from its Chinese congeners by its much smaller size, by its black frontal band from nostril to nostril, by its whitish ring round the eye, by the somewhat different arrangement of blue, white, and black tints on the wings, and by the greater extension of white on the margins of primary quills. Though the members of this genus are somewhat migratory, yet their peregrinations are always within a limited sphere; and wherever the Jay occurs in isolated localities, we meet with aberrations from the typical form. This apparent rule in this interesting group is highly suggestive.

I have only one pair from Formosa; but the characters, which I now proceed to define, are constant.

Length $10\frac{1}{2}$ in.; wing $6\frac{3}{10}$; tail 5 in. (of 12 feathers of nearly equal length); tarse $1\frac{3}{8}$; bill along culmen 1 in., from rictus $1\frac{1}{4}$. General plumage light vinaceous, greyish on the back and scapulars, and delicately barred on the crown with a deeper shade. Rump-band and upper tail-coverts white. Tail black. Abdomen and vent white. Bill bluish grey on rather more than the basal half; apical portion black. Feathers over the nostrils and round the base of the bill black. A ring of white feathers round the eye. Legs light ochreous brown, with brown claws. Irides light clear blue. Quills black, the 2nd primary margined for nearly its whole length with white, the 3rd to a less extent, the 4th less still, until the inner ones have scarce any indication of it; the secondaries with more than their basal half of the outer webs having bars of white blending into deep blue and then black, in consecutive order. The primary coverts and winglet similarly barred, but more closely, the black bars being broader; the foremost secondary coverts bluish grey, finely barred with indistinct black and blue striæ. Lesser coverts vinaceous brown, broadly tipped with a rufous hue of the same. The rest of the wing black. Undershafts of quills and rectrices pale ochreous brown.

100. Dendrocitta sinensis, var. formosæ.

In China I never had the good fortune to meet with this interesting form, though doubtless it must occur in some of the interior hills. In the inner ranges of the Formosan mountains it was common enough, rarely if ever descending to the cleared hills or the lowlands. The Formosan bird offers a few distinctions, but they are too trifling to be regarded as specific. It has a less bulky bill, the black frontal band is much narrower, and the throat is never so black; but in general style of colouring it is so similar to the Indian bird, that it is impossible to separate them.

Bill and legs greyish black; claws brown. Crown, hindneck, rump, and upper tail-coverts bluish grey. Lores and frontal band brownish black. Neck, sides of neck, and breast light greyish chocolate-brown, deeper on the cheeks and throat, and paling on the flanks and belly to almost white. Axillaries and tibiæ deep blackish brown. Vent a fine rufous buff. Back and scapularies clear yellow chocolate-brown. Wings a fine glossy black, duller on the primaries, across which near their bases a bar of white runs, commencing on the inner web of the 2nd quill, and widening as it runs. Tail composed of twelve greatly graduated feathers, broad, and cut nearly square at their ends, with the tips of the shafts slightly projecting; the two central ones black on about the apical half, the remainder bluish grey, but the proportions of these two colours vary in different individuals: the rest of the rectrices black, with a little grey at their bases.—Length 13 in.; wing $5\frac{1}{2}$; tail $7\frac{1}{4}$.

The females appear to be rather duller-coloured than the males, but they are otherwise similar.

An interesting account of this bird and its nesting-habits is given in the Catalogue of Birds in E. I. C. Museum, vol. ii. p. 569, to which I would refer my readers.

101. Megalæma nuchalis, Gould, P. Z. S. 1862, p. 283.

The only species of this genus known from South China is the great *M. virens,* which is also an abundant bird in some parts of India. In Formosa it is represented by this smaller but more lovely species, the *Hoë-kwa-cheow,* or Embroidered Bird, of the Chinese colonists. This Barbet is a true forest-bird, frequenting the higher mountains of the interior, where it may be met with in great abundance, though generally scattered through the wood singly or in pairs. It affects the highest branches of large trees, sitting solitary and often motionless for hours together. Its note is loud and discordant, the bird often making its presence known by its voice when one would otherwise pass it by unnoticed from the resemblance of its plumage to the general foliage. When seen flying from tree to tree, it looks like a cross between an Oriole and a Parrot, if such a thing can be imagined. It feeds on berries and occasionally on insects, also, as I am told, on small birds.

Bill light bluish grey at the base of upper and basal half of lower mandible, the rest deep greyish black. Legs leaden grey, with a greenish tinge; sole-pads dingy brownish; claws brownish white, greyish black on their arches and sides. Irides reddish-brown. General plumage yellowish green. A spot on each lore, a large one on the breast, and a somewhat obscure one on the upper back carmine. Fore part of the crown greenish yellow, golden near the bill, and blending towards the occiput into the fine light-blue nuchal band that encircles the head including the cheeks, but narrowing on the underneck above the red spot. Throat above this band golden yellow. A band of black runs over the eye and ear-coverts; another starts from the nostrils, passing the red loral spot, reaches under the eye to the ear-coverts; the feathers of this band are tipped under the eye with blue, near the bill with greenish. Tail a fine green, with black shafts. Quills black, broadly margined on their outer webs with green, the primaries having further a yellowish edge; some of the tertiaries almost entirely green. Under parts pale leek-green, brighter and yellower on the breast. Axillaries, inner edges of most of the remiges, inner portion of tibiæ, and a part of the belly pale yellow.—Length $7\frac{8}{10}$ in.; wing $4\frac{2}{10}$; tail $2\frac{8}{10}$, of ten slightly graduated feathers; under surface greenish blue, with pale ochreous shafts. 1st quill short, 4th and 5th longest.

Numbers of long stiff bristles spring from base of bill, forming three sets—one from nostrils, one from base of upper mandible, and one from chin or under angle of gonys. The feathers of the back are olive-green, broadly margined with a brighter yellowish green.

102. GECINUS TANCOLA, Gould, P. Z. S. 1862, p. 283.

The Formosan Green Woodpecker is a local representative of the larger Himalayan form, *G. occipitalis,* which is, however, at once to be distinguished from it by its greater dimensions, by its large entirely black bill, by the sides of its neck being yellowish green instead of grey, by the brighter yellowish green of the breast, belly, and back, by its lateral rectrices being entirely brown instead of partially brownish white, and by its primary coverts being margined on the outer web with golden green instead of being barred with brown. The wing is shorter in the Formosan bird; and the primaries have fewer whitish spots, and only just indications of some on the outer edge of the 1st primary, instead of distinct spots; and a grey eye-streak divides the black on the lores from the red frontal crest. Bill blackish grey on the upper and nearly whole apical half of the lower mandible, the basal edge of upper and rest of lower being greenish yellow. Legs deep leaden, with a tinge of olive-green; sole-pads brownish; claws leaden black. Irides pearly white.

When in the mountainous country near Foochow, in May 1857, I procured a male and two young of a very similar species to this, but differing in having the two lateral rectrices on each side banded with brownish white, and having the pale bars on the two central rectrices carried up to the shafts instead of separated from them by a line of brown. The series of specimens I have from Formosa vary but triflingly in the colouring of the tail; but then they are all from the same neighbourhood (Tamsuy mountains). I suppose, after the fashion of the late splitting-up of the Woodpecker species, we must consider the Foochowan distinct from the Formosan bird.

Length $10\frac{1}{2}$ in.; wing $5\frac{1}{2}$; tail $4\frac{3}{10}$. Forehead, in male, carmine; in female, grey broadly streaked with black, like the rest of the crown and hindneck.

The term *tancola* is the Foochow name for the bird that occurs there.

103. Picus insularis, Gould, P. Z. S. 1862, p. 283.

In this we have a small but somewhat close ally of *P. leuconotus,* a bird found throughout Siberia as far as Northern Japan. The species from the Formosan forests has, like it, a red crown in the male, and the lower part of the back white; but it is much smaller in size, and differs in particular colouring.—Length 9 in.; wing $5\frac{3}{10}$; tail 4.

Bill leaden grey, washed with brown, the gonys and apical quarter of lower mandible being light pinkish brown. Legs and claws deep leaden grey, the latter with whitish bases. Crown-cap in the male carmine, the bases of the feathers being black, in the female entirely black; frontal band white. A broad black line runs from base of bill, passes round nape to occiput, whilst a continuation of it runs broadening down the sides of breast, breaking up into long spots which run thickly down the flanks. Ground-plumage of under parts dingy ochreous white, varying in intensity. Centre of belly and vent washed with carmine. Back, upper tail-coverts, and wings black, the latter rather sparsely spotted on the quills with white. A broad white band crosses the rump and lower back; and rather higher up a few feathers are spotted at their ends with the same. Four central rectrices black; the next on each side with two ochreous spots on the outer webs near the tip; the two outer ones with four ochreous white bands, more or less developed, across the black feathers.

In the young bird the black is dull and brownish, the light parts are whiter, and the crimson on the vent and belly is very pale. The white on the lateral tail-feathers is also somewhat differently distributed.

104. Picus kaleënsis, n. sp.

The only species of this spark-headed group that I found in China occurred near Peking. I have described it in this Journal (*anteà,* p. 96) as *P. scintilliceps.* This is another of the same type occurring throughout Formosa. I have a male specimen before me from the S.W. plains near Taiwanfoo, and several from the hilly regions about Tamsuy. It is usual, in the Woodpecker group, for the more northerly birds to have whiter tails; but in this respect our Formosan examples offer the reverse of the rule, for the southern specimen has broader whitish bands and narrower blackish ones than the northern specimens. This may, however, be owing to age or some other cause. The two birds are otherwise too similar to admit of separation. There is a strong resemblance between the Formosan and the North China forms; but the latter are at once distinguishable by their white instead of barred axillaries, by the outer tail-feathers being yellowish white, with but very faint indications of bars, by the back being almost entirely white, by all the spots on the plumage being larger, and by the black streaks on the under parts being narrower and much fainter. They are certainly more distinct from each other than most of the numerous species into which this group is divided.

♂, shot 10th October 1861. Length $6\frac{6}{10}$ in.; wing $3\frac{6}{10}$; tail $2\frac{4}{10}$. Bill light leaden grey, blackish towards the tip, and tinged with greenish yellow at basal half of lower mandible. Inside of mouth flesh-colour, tinged with violet-grey. Skin round the eye blackish grey, with black rim. Iris reddish brown. Legs greenish grey; claws same, with pale bases. Fore part of crown brownish grey. Occiput, back, and wings black; lower part of back broadly barred with white; white spots on the wing, somewhat scanty; spots on some of the lesser coverts large. Four central rectrices black, the vent with a pale ochreous outer edge; the one that follows with a broad outer edge, the tip and a zigzag bar of light brownish ochre; the extreme lateral feathers with the basal edge, the tip, and two well-defined bars of the same. A light brown streak runs from the corner of the eye across each cheek; another of light blackish brown runs from the lower mandible down the neck. Throat and axillaries white, the latter banded with black. Under parts dingy ochreous, with broad blackish-brown streaks on the breast, and narrower ones on the belly and flanks. The male carries a streak of carmine on each side of the occiput, which is wanting in the female.

♂. Heart $\frac{1}{2}$ in. by $\frac{4}{12}$. Liver, right lobe $\frac{7}{10}$ in., left $\frac{6}{10}$. Rings on trachea and bronchi, especially on the latter, widely set.

Testes small and ovate. Stomach heart-shaped, having a somewhat three-lobed appearance, $\frac{6}{10}$ in. long, $\frac{4}{10}$ broad, $\frac{3}{10}$ deep, not very muscular; epithelium moderately thick, deeply and closely furrowed with rugæ, and filled with minute white larvæ. Intestines about 9 inches long, from $\frac{1}{10}$ to $\frac{2}{10}$ thick, with no cæca.

The bill of this, as indeed of all species of Woodpeckers, is valued by the Chinese for medicine. The name applied to the whole group by the Amoy Chinese is *Tok-chew*, or Wood-tapper.

105. Centropus viridis.

Cuculus viridis, Scop.

C. lepidus et *C. affinis*, Horsf.

Chinese name, *Bang-king*.

This is the common and only Crow Pheasant of Formosa. It abounds throughout the plains and lower hill-ranges of the entire island. It is subject to three stages of plumage:—that of the first year, when the upper parts are light rufous, banded with black, the bands on the tail being broader and tinged with green, the throat and under parts being white, washed here and there with rufous; that of the second year, when the upper parts are brown, streaked chiefly along the shafts with light ochreous, the long upper tail-coverts being closely barred with greenish black and rufous ochre, the tail being greenish black, more or less washed with rufous, the wings rufous more or less washed and barred with brown, and the under parts light buff, streaked along the shafts with paler, and barred and mottled with brown; and that of the third year, or adult plumage, when the bill, from a light colour, has become black, the head, neck, lower back, rump, tail, and entire under parts (except the axillaries, which are still rufous) glistening with dark green, and sometimes with purple, the centre of the back, the wings, and the scapulars being rufous, many of the feathers of the latter and the tertiaries having pale ochreous streaks along their shafts. But the period of change is so inconstant, that at the same season you can procure specimens in almost every plumage and almost every intermediate stage of change. The males are generally much larger than the females; but size is in this bird exceedingly variable, scarcely two being found to have the same general length, the same length of wing or of tail; and their bills also vary greatly in length, in breadth, and in thickness. Indeed, if out of my series two extremes in form were selected, a modern naturalist would have no hesitation in consigning them to separate species. Hence the confusion that has arisen in this widely distributed species, and the number of synonyms it possesses.

This bird is fond of perching on the thick foliage of evergreen trees, balancing itself on its unstable perch by means of its wings, and springing from one branch of leaves to another, by means of its long Lark-like claws, after locusts and other soft insects of that family. It suspends its large rush-framed cradle between the long leaves of the sugar-cane and other reeds, weaving the dried hanging leaves into the bottom of its nest, and thus forming them into supports. In this rather rude structure it lays generally four white eggs, which vary much in shape and size, but are usually obtuse at both ends, averaging 1·3 by 1 in., are rather thick-shelled and rarely glossy. On the notes of the bird I have remarked in previous papers. Its flight is straight, executed with short flaps and once and again a motionless sail through the air, the tail being held somewhat horizontally, but generally rather on the decline. At the end of September 1861, a nest of four live young birds was brought to me, and I kept them alive some time. Like other young Cuckoos, their appetites were insatiable; and when nearly choking, they would still continue their cry for more food. This cry is a loud and frequent imitation of the syllable "churr." As soon as you left them to themselves, their notes would change to *toc-toc-too*, uttered in a subdued voice. This last note is often heard from the adult bird. The little creatures, only partially clothed with a rufous down, with the quills only just beginning to sprout, looked complete oddities. Their mouths were of a dark red-pink. A week after, the insides of their mouths had paled to flesh-colour with the top of the tongue black, the beak was flesh-coloured, washed with brownish, irides grey, legs leaden violet; the lark-heel was then very short.

I extract from my journal a note on a full-fledged bird, shot 4th October 1861:—"Bill flesh-coloured, except the culmen, which is broadly marked with blackish brown. Inside of mouth flesh-colour, with a wash of ochreous, marked on tongue and lower jaw with blackish; basal two-thirds of tongue covered with inverted papillæ; roof of mouth also papillose. Iris umber-brown. Skin round eye and ear purplish grey. Legs slate-colour, with light-yellowish-grey soles. Lark-heel well developed, and with other claws coloured blackish brown, with pale tips and undersides."

Adult ♂, shot 20th July 1861. "Length 14 in.; wing $6\frac{2}{10}$; tail $7\frac{1}{4}$. Bill black, inside and tongue blackish grey; roof of mouth and base of tongue ochreous flesh-colour. Skin of head deep purplish grey. Iris yellowish brown; skin round eye greyish black. Legs and toes deep blackish grey, pale and yellowish at the joints and soles. Feathers of the wings and tail much abraded."

Another adult ♂, shot 8th August 1861. "Length $15\frac{1}{2}$ in.; wing $6\frac{8}{10}$; tail $8\frac{1}{2}$. Bill black; inside of mouth blackish grey. Iris brown, with a ring of straw-yellow. Ear-opening horizontally lunate, $\frac{3}{10}$ in. long. Legs blackish grey, blacker on the claws."

Another in second plumage, shot 27th December. "Length $14\frac{1}{2}$ in.; wing $6\frac{7}{10}$; tail $7\frac{3}{10}$. Bill pale fleshy horn-colour, the basal part of culmen being blackish brown. Inside of mouth pale yellowish flesh-colour. Irides brownish ochre, the upper eyelid having several coarse black lashes with white bases. Tongue broad at the base, sagittate; apical half horny and furrowed; basal half fleshy, and covered with inverted papillæ, as also is the roof of the mouth. Legs leaden grey, with light yellowish-grey soles and light blackish-brown claws."

106. CUCULUS KELUNGENSIS, n. sp.

Of the many confused groups of birds, none are in such a hopeless state of inextricable confusion as the Cuckoos. This is owing to the difficulty of pointing out sufficiently recognizable characters to enable others to distinguish the particular species which the discoverer wishes to describe from its numerous closely allied congeners. If difference of note is to be taken as a guarantee of difference of species, then must we consider the many Eastern forms distinct; but when we come to compare individual birds, we find the specimens so variable, and running so much one into the other, as to make it next to impossible to draw up definite distinguishing characters, and to lead one almost to suppose that the various races interbreed. Mr. Blyth has kindly looked over my many Cuckoos from China and Formosa, and declares that the majority of those from Amoy, and all from Peking, belong to *C. canorus.* These I had noted in all my previous papers as *C. striatus,* with the statement that the note of our bird was identical with that of the English Cuckoo. I must, however, in justice to myself, declare that the mistake occurred through the wrong identification by Mr. Blyth of a skin of *C. canorus,* sent from Amoy, before that gentleman had studied the Cuckoo-group so well as he has since done. At Amoy Cuckoos come to us merely on their hasty passage in their vernal and autumnal migrations, and we therefore have seldom an opportunity of hearing their notes. I have, however, in the interior of the country, near Amoy, watched a Cuckoo which uttered quite a peculiar note. Of this bird I possess one specimen, which Mr. Blyth identifies as the *C. micropterus,* Gould. I have another from the same locality set down by the same authority as the *C. himalayanus,* Vigors (see Gould's Cent.), which equals *C. poliocephalus.* To this last our North-Formosan bird is most closely allied, but is bigger, with a larger and longer bill, and with the whole of the breast bluish grey. As all the four specimens I possess from Formosa agree in these peculiarities, I have thought it right to keep them, for the present at least, separate from the Chinese bird. I believe the Formosan bird is a summer visitant only. All my skins of this race were procured, in April, in the North of Formosa; and as I did not procure it in the S.W., I have named it after the northernmost district, *Kelung.* In the proportions of their wings and tails the specimens vary, but the males are always decidedly larger than females.

♂. Bill along culmen 1 in.; along base of lower mandible 1·15. Total length 13 in.; wing 7·7; tail 6·6. Upper mandible and apical three-tenths of lower blackish brown. Basal edge of upper and remainder of lower orange-yellow, the latter tinged with green and dingy. Inside of mouth orange. Rim round eye orange-yellow. Iris light chestnut-orange. Legs and claws orange; the toes lighter, and some of them washed over the greater part with blackish grey. Ear-covert roundish, smaller than the eye, the aperture occupying the upper semicircle.

The colours of the Cuckoos are too variable to hope upon them to establish specific characters. The form and size of the bill appear to be the most constant characters, and these require personal comparison to ensure correct identification.

I have frequently met with the North-Formosan Cuckoo in my rambles, but have unfortunately never heard its notes. It is a common summer bird about all the hilly region near Tamsuy and Kelung.

107. Cuculus canorus, L.

On the coast near Taiwanfoo I procured a stray specimen of this species. Mr. Blyth has examined and identified it. It was procured in September, and was apparently on its southerly migration. I never heard or saw the European Cuckoo at any other time in Formosa.

108. Treron formosæ, sp. nov.

I have unfortunately only a female of this interesting Green Pigeon. It was shot in the neighbourhood of Taiwanfoo on the 21st August 1861, where it was a rare bird. I had an opportunity of once seeing a male close to my garden in that city, and I was told by a mandarin that he had kept a pair alive in a cage. It is a forest-loving bird, and, I dare say, not rare in the mountains of the south; but in the mountain-forests inland of Tamsuy I did not meet with it.

Length $12\frac{3}{4}$ in.; wing $7\frac{2}{10}$; tail 4, somewhat wedge-shaped, the feathers being rounded at their tips. Bill, basal two-thirds cobalt blue; apical pale, with a tinge of yellowish. Bare skin round the eye bluish grey. Iris comprising a bluish grey ring round pupil, then a narrow black ring, then a pearl-grey ring, and lastly a broad black ring. Legs madder-pink, with pale yellowish soles and blackish brown claws. Upper parts rather dark green, yellow on the head and rump. Throat grey, each feather margined with yellowish green. Breast and belly yellowish green, yellower on the belly. Abdomen primrose-yellow. Flanks and vent dark green, broadly margined and tipped with primrose. Quills black, delicately margined with greenish yellow, 2nd quill rather longer than 3rd, and longest in wing; primary coverts and secondaries black, margined with clear yellow; tertiaries and other coverts green, some of them being likewise margined. Axillaries and underwings slate-grey. Tail olive-green, with a good deal of brown on the inner webs, the shafts of the feathers being light brown; undertail blackish brown, paling towards the tip and at the edges.

There is much similarity between this bird and the *Vinago sieboldii*, of the 'Fauna Japonica;' but this is a good deal smaller, differs in particular tints, and has a more decidedly Treronine bill.

109. TURTUR RUPICOLA (Pallas).
Columba orientalis, Lath.
C. gelastes, Temm.

I procured a pair of this Turtle-Dove at Tamsuy on the 1st of April. They were frequently seen during winter, and I think are in Formosa, as in South China, merely winter visitants.

110. TURTUR CHINENSIS (Scop.).

The ordinary resident Turtledove of all North China, from Canton to Shanghai, is also the prevailing species throughout Formosa. I can discover no distinction between them in my series of skins from both countries. Their nests are small flat panniers, of the usual form, and contain two white eggs, rather glossy, averaging in length 1·1 in. and in breadth ·85.

111. TURTUR HUMILIS, Temm.

Very abundant during summer in the low country about Taiwanfoo. The young males cast off the immature garb very rapidly, and assume that of the adult in the moult of the first autumn, their full plumage being almost complete when they leave the country in the fall. Often nestlings in mottled plumage, with down still adhering to them, show here and there a red feather of the male plumage. The *coo* of this species is a peculiar kind of rumbling murmur, not unlike the sound produced by one branch rubbing against another.

Young, procured 18th July 1861. "Iris dusky yellowish brown. Bill, bare flesh round the eye, and throat-skin purplish flesh-brown. Legs a similar colour, much paler on the soles and undertarsi. Feathers of the back, breast, and wing-coverts broadly edged with yellowish brown."

♂, shot 23rd July, 1861. "Length $9\frac{1}{2}$ in.; wing $5\frac{1}{2}$; tail $3\frac{8}{10}$. Bill purplish black; skin round the eye yellowish grey. Iris dark brown. Legs and claws deep purplish brown, with whitish undertarsi and edges to scales, and yellowish soles. Crop distended with black sesamum-seeds. Length of intestine $15\frac{7}{10}$ in.; cæca very small, situate about $1\frac{2}{10}$ from anus."

The eggs of this species are, as usual, two in number and white; they measure ·97 in. by ·26.

112. Coturnix communis, Bonn.

Occurs all the year round, but more abundantly during winter.

113. Turnix ocellatus (Scop.). Chinese name, *Bo-bay* (tailless) *Kaw-toon.*

This is not an uncommon bird on the plains near Taiwanfoo, but, from its small size and skulking habits, is hard to flush without a good dog. A pair of little chickens were brought me on the 19th August 1861. Their cry was not unlike that of a domestic chicken. Bill blackish, purplish towards the base, yellowish inside the mouth and at the angle. Iris blackish brown. Legs and claws pale ochreous yellow. Bare skin round the eye and ear leaden grey. General colour of the down light ochreous, striped on the upper parts longitudinally with black and rich chestnut-brown, presenting a mottled appearance. I also procured a nest with four eggs in it—the usual number, I am told, laid by this species. The nest was a loose structure of fine grass, with seed-tops quite green, lined with drier materials, the whole being placed in a depression in the ground. The eggs varied greatly in size, and were of a light rich sepia-tint, mottled and blotched with deeper shades of the same, in two conspicuously at the larger end, in one at the smaller, and in the smallest egg not blotched at all. Two of the eggs measure about ·9 in. long and ·75 broad. Of the other two, which are nearly of a size, the smaller measures ·67 by ·6 in.

114. Excalfactoria chinensis (L.). Chinese name, *Koo-lew.*

This widely distributed, prettily marked Quail occurred also in the plains. Eight small eggs, of a clear uniform light olive-brown colour, almost similar to those of the Nightingale, were brought to me on the 21st August 1861. The native declared them to be the eggs of the *Koo-lew*. The eggs vary only triflingly in size, the largest being 1 in. by ·82.

115. BAMBUSICOLA SONORIVOX, Gould, P. Z. S. 1862, p. 285. Native name, *Teëk-koë* (Bamboo-fowl).

This and the cognate form from the Foochow hills, *Perdix sphenura*, J. E. Gray (*Perdix thoracica*, Temm.), Mr. Gould has, at my suggestion, separated into a distinct genus.

Bill leaden black, the upper mandible having a brownish white tip. Legs, toes, and spurs dark brownish olive-green, blacker on the toes, and whitish brown on the claws.

Length $9\frac{1}{2}$ in.; wing $5\frac{2}{10}$; tail $3\frac{8}{10}$, of 14 rectrices, much graduated, the outer one being $1\frac{3}{10}$ shorter than the central, ends rounded. Wing much rounded; the 4th, 5th, 6th, and 7th quills nearly equal and longest. The hind tarsi armed with a sharp conical spur in the male, which is in the female replaced by a wart. Face, hindneck, and breast dark smoke-grey, mottled with very small dark specks; the feathers on the crown rufescent, with dark centres and rufous margins. Throat deep maroon-colour. Under parts ochreous clay-colour, most of the feathers being stamped with a large quadrangular spot of maroon. Axillaries brown, striated with a deeper shade. Tibial feathers, abdomen, and vent olive-grey in the male, clay-colour in the female, the vent with reddish-black spots. Feathers of the back olive-grey, finely mottled with black, and marked with a large central deep-maroon drop; the scapulars similarly coloured, with the addition of a white spot on the outer web of each; on the wing-coverts the grey gives place to light yellowish brown, and the white spots to ochreous. Primary quills deep brown, rufous on the outer web, mottled with black, and edged with light rufous brown; secondaries with a black ochreous mottling; tertiaries the same, having in addition an ochreous spot on the outer web, and a large spot of black-edged deep maroon near their tips. The white and ochreous spots on the wings and their coverts are of different shapes, varying from an arrow-head to an annular form. Lower back, rump, and upper tail-coverts greyish olive-brown, finely mottled with black. Tail reddish brown, barred with black-edged bars of rufous ochre, and mottled all over with fine black striæ. The maroon spots on the under parts are more or less shaded with black.

The female is rather less strong in form than the male, has a wart instead of a spur, but, with the exception of the feathers about the abdomen, is otherwise similar.

The *B. thoracica* is at once distinguished from this species by the rufous of the throat being extended to the cheeks and sides of neck, by the rufous-ochre spots on its crown, and by the large spots on the under parts being black, as well as by other minor particulars in colouring. It is also of larger size and proportions.

A pair of immature birds were brought to me on the 16th August 1861. They uttered a continuous loud fowl-like scream. Their bills were blackish grey, with paler edges and tip; inside of mouth ochreous flesh-colour. Iris hazel. Rim round eye deep brown; bare skin about the eye greenish yellow. Legs dark greenish grey, with greenish incipient spur in the male bird, and brownish grey claws. Their stomachs contained grass-seeds. Their flesh was sweet and tender. The immature bird has no rufous on the crown; the grey of the neck is pale and brownish; the throat pale ochreous white; the under parts much lighter, with only a few spots; the tail redder, and the wing-coverts more distinctly spotted and marked.

This and the Foochow Bamboo-fowl are of very similar habits and notes. This species is found throughout all the hills of Formosa, generally scattered about the bush, never in coveys. It is very pugilistic, the males and females both singing the same loud cry, beginning with *killy-killy*, and ending rapidly with *ke-put-kwai*, which is so powerfully uttered that it may be heard at a great distance. They are not easily flushed, lying so close to the ground that you may walk over the spot whence the noise appears to come, and rarely put up the bird. Each pair selects its own beat, setting up, frequently during the day, the challenge-note; and woe betide any other Partridge that encroaches on the forbidden ground! They both set on him at once, and buffet him without mercy till he takes to his heels.

This pugnacious propensity often meets, as perhaps it deserves to do, with an evil fate. The Chinese fowler listens for the challenge, and sets on the disputed hill a trap with a caged decoy within. The decoy is trained, and sets up a reply. The lord and lady of the manor rush to the spot, and run recklessly into the trap and are caught. The captures are taken to the market and sold as cage-birds, the Chinese having a great love for the horrible screeching cry that this bird is incessantly sending forth. In the night this bird leaves the shelter of the grass and bush, and repairs to the branches of bamboos and other trees to roost. It is an excellent percher, being quite at home on a branch, in which respect it differs from the Chinese Francolin (*Francolinus perlatus*), which never perches. It nests in a depression in the ground, usually under shelter of a bush or tuft, and lays a large number of eggs—from seven to a dozen or more. The eggs a good deal resemble those of *Perdix cinerea*, being of a dark brownish cream-colour; length 1·38, breadth 1 in. I have, however, one very small egg, measuring 1 by ·85 in.

I add a note on a female *Bambusicola thoracica* (Temm.), procured at Foochow, 12th May 1862. "Length $10\frac{1}{3}$ in.; wing 5; tail $3\frac{2}{10}$. Bill blackish grey, with broad pale tip. Iris rich brown; eyelid brown. Legs and claws light greenish grey, with spur-wart of same colour."

116. Phasianus torquatus, Gmel.

The Pheasant found throughout the plains and lower hills of Formosa is identical with the Chinese Pheasant, the only noticeable difference between the two being in the Formosan having the ochreous flank-feathers very pale. In other respects, I think, their identity is complete.

117. Euplocamus swinhoii, Gould, P. Z. S. 1862, p. 284.

I was informed by my hunters that a second species of Pheasant, which was denominated by the Chinese colonists *Wá-koë*, was found in the interior mountains, that it was a true jungle-bird, frequenting the wild hill-ranges of the aborigines, and rarely descending to the lower hills that border on the Chinese territory, and that in the evening and early morning the male was in the habit of showing himself on an exposed branch or roof of a savage's hut, uttering his crowing defiant note, while he strutted and threw up his tail like a rooster. I offered rewards and encouraged my men to do their utmost to procure me specimens of this bird, and I was so far successful that I managed to obtain a pair; but in my trip to the interior it was in vain that I sought to get a view of it in its native haunts, and to make acquaintance with it in a state of nature.

The female was brought to me on the 1st of April, soon after it was shot,—the heat of the weather compelling the hunters to skin it before they could reach me. It was, however, quite fresh enough to enable me to note the tints of its soft parts. "Naked patch on cheek large and conspicuously red. Bill dark greyish brown. Legs a clear vermilion, the scale-joints and sole-pads, as well as the claws, being dingy yellowish brown. Tail rounded, and consisting of sixteen feathers."

The fresh skin of the male arrived on the 11th April. My hunters had taken this bird alive; but it battered itself so, that they were obliged to kill it to save its feathers. The cheek-skin was of a bright crimson. Bill blackish grey, the apical half paling into ochreous brown colour. Legs bright pink-vermilion; soles a light dirty ochreous; toes the same, patched with blackish. To give my readers an idea of the plumage of this beautiful bird, I cannot do better than extract Mr. Gould's remarks on it from the 'Proceedings':—

"*Male.* Forehead black, gradually blending from the crown into the snowy-white lanceolate plumes which form a slight crest and continue in a narrow line down the nape of the neck. Back snowy white, offering a strong contrast to the narrow line with which it is bounded on each side, and the rich fiery chestnut of the scapularies; lower part of the back, rump, and upper tail-coverts intense velvety black, broadly margined with shining steel or bluish black, these scale-like feathers gradually becoming of a larger size and of a more uniform black as they approach the tail-feathers. Wings blackish brown, the greater and lesser coverts fringed with green; two centre tail-feathers snowy white, the remainder black; the somewhat elongated feathers of the chest and flanks black, with shining blue reflexions; thighs and under tail-coverts dull black. Legs and spurs blood-red, except the tips of the latter, which are brown. Sides of the face wattled to an extent seldom seen even among gallinaceous birds; in front it extends to the nostrils, while posteriorly it terminates in a point near the occiput; a large lappet hangs down over each cheek, and a more pointed one rises, in the form of a horn, high above the crown, the whole being of the finest red, and covered with papillæ, as in the *Gennæus nychthemerus*; bill light horn-colour.

"Total length 28 in.; bill 1½; wing 9; tail 17; tarsi 4.

"*Female.* This sex offers a strong contrast to the male, from there being no appearance of a crest in any specimen I have seen, and in the entire plumage being reddish or orange-brown, particularly the under surface; when examined in detail, however, many different but harmonizing tints are seen on various parts of the body: on the back of the neck, mantle, scapularies, and lesser wing-coverts the freckled brown feathers have lanceolate or spearhead-shaped markings, surrounded with black down the centres, while the rump and upper tail-coverts are more uniformly and more finely freckled with orange and dark brown; primaries alternately barred on both surfaces with chestnut and dark brown; secondaries dark brown, conspicuously barred with ochre-yellow; throat brownish grey; chest orange-brown, each feather with two crescentic markings of dark brown; centre of the abdomen and thighs orange-brown, slightly freckled with dark brown; two centre tail-feathers dark brown, obscurely barred with buff; lateral tail-feathers nearly uniform deep chestnut; bill horn-colour; space surrounding the eye and legs red.

"Total length 18 in.; bill 1¼; wing 8½; tail 8; tarsi 3.

"*Remark.*—This exceedingly beautiful species is one of the most remarkable novelties I have had the good fortune to describe: in size it is somewhat smaller than the *Gennæus nychthemerus,* which it resembles in its red wattles and in the form of its tail; while in its strong legs, the scaly stiff feathers of the lower part of its back, the red and white colouring of the anterior portion of its upper surface, and in its steel-blue crest it more closely assimilates, in my opinion, to the members of the genus *Euplocamus*; and with that group (the Firebacks) I have accordingly associated it."

118. GLAREOLA ORIENTALIS, Lath.

These birds abound on the flat marshy grounds near Taiwanfoo, and I there procured a good series of specimens in various stages of plumage. The dark parts of the adult are in the young brown, mottled with blackish brown, and margined with white, the collar being indicated by blackish spots. The upper parts at an early season in the autumn change to greenish brown, margined with light rufous brown; and the underneck and breast become rufescent, the collar becoming more strongly indicated. At all stages the axillaries are bright rust-red. In those I dissected the gizzard was roundish, compressed at the sides, with moderate lateral tendons; epithelium stained a sienna-brown, and containing remains of *Locustæ* and some small bits of porcelain and pebbles.

The flight of this bird is much like that of the Golden Plover, only swifter, with more evolutions. Its eggs are four in number, laid in a depression in the ground. It often feeds on the *Cicindelæ* that swarm on the sands: running with velocity after its prey, springing lightly into the air as the insect takes wing, and snapping it with a quick turn, in the manner of a *Muscicapa* it wheels round and alights again on the ground.

119. SQUATAROLA HELVETICA (L.).

Frequents our shores, and the mouths of our rivers in winter. I procured one with indications of black on its belly, showing that in its summer retreat the nuptial plumage is assumed. This, however, as I have before observed, is not the case with birds in confinement.

120. CHARADRIUS LONGIPES, Temm.

Common with us all the year round, breeding in great abundance on the south-west marshy plains. Its eggs, four in number, are laid in a loose nest of dried grasses and fibres placed in a hollow. They are of a yellowish-grey ground-colour, blotched and spotted with deep blackish sepia, and have occasional obsolete purplish grey spots. They do not vary much in size, are narrowed at the end, and measure 1·5 in. by 1·1.

Adult ♂, shot 4th September 1861. Length $8\frac{1}{2}$ in.; wing $5\frac{3}{10}$; tail $2\frac{2}{10}$; the two central rectrices rather pointed, and somewhat longer than the rest. Bill along culmen 1 in., to gape $1\frac{2}{10}$, black, purplish at the swollen base of upper mandible, and greenish ochre at base of lower. The basal half of the culmen is fleshy, and shrinks when dry, which makes the fore part of the bill much higher; but in fresh examples the culminar line in all *Charadriidæ* is much more nearly straight than would appear from ordinary drawings. Iris deep umber. Ear as large as the eye, round, operculum well exposed. The whole of the upper parts of the bird, and the sides of its breast more especially, are washed with a warm buff tint. Exposed tibia, to joint, $\frac{7}{10}$ in; tarsus $1\frac{1}{2}$. Legs greenish grey, yellower on the tarsi, and browner on the toes; claws deep brown.

121. ÆGIALITES GEOFFROII (Wagl.).
Charadrius leschenaultii, Lesson.
Ch. fuscus, Cuv.
Hiaticula rufinus, Blyth.

This, the largest species of Ring-Plover known, was abundant on the sandy shores of Formosa. The stomachs of those I examined were lined with epithelia of a mud-colour, and filled with remains of small univalve mollusks and Crustacea. This species is at once to be recognized by its large size, its heavy bill, and by its having no indications of the white nuchal collar.

♀, shot 29th August 1861. "Length $8\frac{1}{2}$ in.; wing $5\frac{4}{10}$; tail $2\frac{4}{10}$, of 12 feathers. Bill blackish brown, ochreous flesh-colour at base of lower mandible. Inside of mouth flesh-colour; tongue blackish at tip. Eye large and blackish brown. Legs light yellowish grey, with a tinge of green; toes more leaden-coloured, with black claws."

122. ÆGIALITES CANTIANUS (Lath.).

Very abundant all the year round. Numbers breed with us. This species is very variable in the length of bill, as also in the intensity of the red and black of its nuptial dress. Some specimens also, during summer, become very much faded, some almost to albinism. *Ægialites nivosa*, Cassin, seems to me no other than this bird. Cassin's species was founded on a single specimen procured in California (see 'Birds of North America,' p. 696).

123. ÆGIALITES PHILIPPINUS (Scop.).

Charadrius curonicus, Bechs.

C. minor, Meyer.

This pretty little species, which has occasionally been shot on the British coasts, is with us a plentiful resident, and breeds on the sandy shores. In autumn, when the black facings of the nuptial plumage fade away, a strong touch of buff tinges the white of the head and neck. In this plumage I procured a pair on the 10th September 1861, and took down the following note on them :—"Length $6\frac{1}{2}$ in.; wing $4\frac{3}{10}$; tail $2\frac{4}{10}$. Bill blackish brown, brownish ochre on base of lower mandible. Iris dark umber; eye-skin brownish, tinted with yellow at the angles in the female, in the male a bright orange. Legs and claws clear yellow ochre; claws black. Inside of mouth pale bluish flesh-colour."

124. HÆMATOPUS LONGIROSTRIS, Gray.
125. RECURVIROSTRA AVOCETTA, L.

A few parties of both these visit the Apes' Hill Creek every winter.

126. TOTANUS GLOTTIS, L.

Adult, shot 4th September 1861. "Length $13\frac{7}{10}$ in.; wing 7; tail 3. Bill along culmen $2\frac{3}{10}$ in., to gape $2\frac{4}{10}$. Apical half of bill blackish brown; basal half leaden grey. Ear-covert as large as the eye, dark purplish grey; operculum an oval slit, running obliquely through more than half its diameter. Iris dark umber. Legs and toes light ochreous grey, patched with ochre on the toes, and dark leaden grey at their joints; claws deep brown. A few dark brown angular spots on the breast, which is otherwise white."

A winter visitant.

127. TOTANUS STAGNATILIS, Bechst.

Scolopax totanus, L.

Totanus horsfieldi, Sykes.

T. lathami, Gray.

T. tenuirostris, Horsf.

I procured only one of this species, on the 30th August 1861, out of a small flock on the mud-flats near Taiwanfoo. I have never met with the bird on the Chinese coast.

"♂. Length $10\frac{8}{10}$ in.; wing $5\frac{3}{10}$. Tail only partially moulted. Bill greenish black. Legs yellowish grey, with a tinge of green; claws black. Intestines 20 in. long; cæca $1\frac{1}{10}$ from anus, about $\frac{3}{4}$ long."

128. Totanus calidris, L.

Both this and the *T. fuscus* have been procured in North China. This I noticed in small parties on our mud-flats during early winter.

Adult ♀, shot 30th September 1861. "Length $11\frac{1}{2}$ in.; wing $6\frac{1}{10}$; tail $2\frac{1}{2}$, of 12 feathers. Bill, along culmen, $1\frac{7}{10}$ in. Exposed tibia $1\frac{2}{10}$ in.; tarsus 2. Bill, apical half black; basal half olive flesh-colour, the lower mandible having less of the olive than the upper. Inside of mouth light olive flesh-colour. Legs orange, somewhat greenish on tibiæ, and brighter on toes; claws black." A cluster of small eggs proved this specimen to be an adult female. From this I should fancy that it is usual for the species, after breeding, to lose the red tints of the bill, and to assume them again in winter, birds shot during the cold season having usually that organ so coloured.

129. Totanus glareola, Gmel.

Flocks abundant in early winter and spring, when they are passing on their migrations.

130. Totanus ochropus, L.

Sometimes on the coast, but more commonly scattered about the banks of inland waters and marshes in small parties or singly. I believe a few stay with us to breed.

131. Totanus brevipes, Vieill.

T. cinereus, Gray's 'Genera.'
T. glareola, Pall.
T. pulverulentus, S. Müller.
T. griseopygius, Gould, B. of Austr. vi. pl. 38.

Common on the large mud-flats near Taiwanfoo during early winter, passing southerly.

Adult, shot 30th August 1861. Length 11 in.; wing $6\frac{1}{4}$; tail $2\frac{8}{10}$, of 12 feathers. Bill blackish brown on apical half, greenish brown on basal half of upper mandible, greyish ochre on lower. Legs and toes yellow ochre, washed with greenish grey; claws black. The specimens of this bird I dissected were very fat. "Proventriculus $\frac{9}{10}$ in. by $\frac{4}{10}$ at widest part; gizzard an irregular round, with moderately muscular lateral tendons, greatest diameter $1\frac{1}{10}$, depth $\frac{9}{10}$; epithelium thick and leathery, somewhat rough to the touch, widely and irregularly furrowed, and containing remains of a small Crab, of which the carapace and several legs were nearly entire. Cæca $1\frac{3}{10}$ in. from anus, right one $1\frac{6}{10}$, left rather longer, in thickness about $\frac{1}{10}$. Intestine $18\frac{1}{2}$ in. long; greatest thickness $\frac{3}{10}$. Tongue $\frac{7}{10}$ in. long, thick and horny, except close to the base, the lateral edges turned up, and the tip pointed."

This bird is a summer resident in Northern Japan, Kamtschatka, and the Aleutian Isles (Temminck), migrating for the winter to the islands of the Indian Archipelago. In its migrations it passes the coasts of China and Formosa in September and April. I have procured specimens at these seasons at Amoy; and in Formosa I obtained three adults in summer plumage, and three immature birds at the end of August and beginning of September. According to Cassin, it also occurs on the coasts of Western America. The plumage of this species, in the immature winter and summer dresses, has been well described by Schlegel in the 'Fauna Japonica.' The young bird is mottled on the dark parts of the breast and flanks, and freckled on the scapulars and wing-coverts, with whitish. It is in this dress the *T. pulverulentus* of Müller. In the summer plumage it is spotted on the throat, and barred irregularly on the breast and flanks with blackish grey. In the winter, the breast is of a uniform colour with the back. It is then the *T. cinereus* of Gray's 'Genera.'

132. TRINGOIDES HYPOLEUCUS (L.).

An abundant resident species, though its numbers are greatly increased in winter by the arrival of flocks from the north. Adult, shot 3rd May. "Length $7\frac{8}{10}$ in.; wing $4\frac{3}{10}$; tail $2\frac{4}{10}$. Bill blackish, deeper at the tip, and more flesh-coloured towards the base, especially of lower mandible, with a slight bronze tint. Inside of mouth ochreous flesh-colour. Eye-rim very narrow and black; iris very deep hazel. Legs yellowish grey, with an occasional tint of greenish; claws black."

133. Limosa uropygialis, Gould, B. of Austr. vi. pl. 29.

A few small passing flocks of this species usually occur on our coast in September and April. I procured no specimens in Formosa.

134. Numenius minor, Schleg. Faun. Japon.

Numenius minutus, Gould, B. of Austr. vi. pl. 44.

This species also occurs very late in spring and early in autumn, at the end of April and August respectively. It has been well figured in the 'Fauna Japonica' and 'Birds of Australia.'

♂, shot 29th April. "Length $12\frac{8}{10}$ in.; wing $7\frac{3}{10}$; tail 3, of 12 feathers; wings, when closed, reaching to $\frac{1}{10}$ in. of end of tail. Bill along culmen $1\frac{7}{10}$ in., from angle $2\frac{1}{10}$. Upper mandible somewhat curved; lower straight to $\frac{1}{2}$ in. from the end, when it suddenly bends downward. Bill blackish brown, flesh-brown at base of upper mandible, and pale ochreous flesh-brown for basal two-thirds of lower. Inside of mouth pale ochreous flesh-colour. Tongue $\frac{3}{4}$ in. long, shaped like a long pointed arrow-head, with the edges at the tip turned up; tip horny, the rest fleshy. Irides dark brown; eye-rim blackish brown. Naked portion of tibiæ $1\frac{2}{10}$ in.; tarsi $2\frac{2}{10}$, pale clayey flesh-colour, browner on the toes and semiwebs; claws blackish brown."

♀, of same date. "Length $13\frac{2}{10}$ in.; wing $7\frac{2}{10}$, reaching to $\frac{4}{10}$ in. of end of tail, which is $3\frac{1}{10}$ long." The gizzards of both these specimens contained numerous black weevils (*Curculionidæ*) and a few Coleopterous larvæ.

135. Numenius uropygialis, Gould.

This is the Eastern representative of the European Whimbrel, differing chiefly in having the rump barred and spotted instead of pure white. A native brought me a pair at Taiwanfoo on the 30th October; and from the accounts I have received I have reason to believe it breeds on the island. "Length 15 in.; wing $8\frac{1}{2}$; tail $3\frac{1}{2}$. Bill along culmen $3\frac{2}{10}$ in., to rictus $3\frac{3}{10}$; tarse $8\frac{3}{10}$. Bill and apical half of lower mandible blackish brown, somewhat fleshy in parts, the rest flesh-colour. Legs deep clear violet leaden; claws blackish brown."

136. Numenius major, Schlegel, 'Fauna Japonica.'

This species, which differs from *N. arcuatus* in having a longer bill and longer legs, frequents our shores in great abundance during winter, retiring northerly on the approach of summer.

137. Numenius arcuatus, L.

Flocks of these also visit the Formosan shores in winter, but not in such abundance as the last-named, *N. major*, which summers in Japan, and is easily distinguished from this species by its much larger and longer bill, and by its longer legs.

138. Numenius rufescens, Gould, P. Z. S. 1862, p. 286.

The single female specimen that I procured of this very rufescent species was shot on the sand-flat that divides the Tamsuy River, near its mouth. It had for some days been observed, in company with its mate, passing to and returning from its feeding-ground, the peculiar character of its long-drawn cry distinguishing it at once from the large species that visits these shores during the winter, the note more resembling the melancholy whistle of of the Grey Plover. From the developed state of its ovary and the late season of the year when observed, I have little hesitation in stating that it is a resident species. It differs from *N. major*, and agrees with *N. australis* of Australia, procured by me on the Peiho flats, near Peking, in having a striated rump; but it is much more rufescent than that bird, and we cannot do otherwise than regard it as a well-defined race, closely allied to the Australian Curlew.

♀, shot 8th April. "Total length $24\frac{1}{2}$ in.; wing $12\frac{7}{10}$; tail $4\frac{8}{10}$. Bill to gape 7 in., blackish olive, tinted with flesh-colour, darker on the apical half; basal half of lower mandible light flesh-colour, tinged with ochre. Inside of mouth flesh-colour. Eyelid feathers white; skin round the eye blackish brown. Iris deep chocolate-brown. Ear-conch larger than the eye, round; operculum ovate and exposed. Legs leaden grey, blackened on the joints, webs, and sides of the toes. Tarsi 5 in. in length; claws blackish brown, with ochreous edges."

On dissection this bird proved to be a female, with large well-developed eggs and oviduct, evidently within a few days of laying, proving that its nesting-site could not have been far distant. If this be a good species (and I am inclined to think it is), it strikes me as rather a strange fact that two species of true *Numenius* should be found indigenous to the same semi-tropical island, the smaller species, or Whimbrel, ranging over the southern portion, and the present species over the northern. *N. australis* was very abundant on the Peking marshes in August; but I have never met with it as a visitant in South China, nor yet has it been recorded from Japan. The present bird would appear to be a resident species; and we cannot help thinking that its differences from the typical *N. australis* may be due to its isolation and inability to interbreed with its near ally.

The only specimen I have of this interesting Curlew is at present in the hands of Mr. Gould. I must therefore extract his description of it from the 'Proceedings':—

"Head, neck, upper and under surface reddish fawn-colour, deepest and most conspicuous on the rump and tail-feathers; down the centre of each of the feathers of the neck and abdomen is a streak of blackish brown, which becomes broader and more conspicuous on the neck and breast; primaries blackish brown, strongly toothed on their inner margins with greyish white; tail-feathers irregularly crossed with blackish brown; thighs light buff."

I observe, on comparing my bird with a specimen of *N. australis* in Mr. Gould's collection, that mine has much thinner and fewer black streaks on the neck and breast.

139. TRINGA CINCLUS, L.

T. alpina, L.

T. chinensis, Gray.

My specimens from Formosa vary considerably in length and curvature of bill, and proportions of legs; but the summer plumage, in which I procured several examples, proves them to be nothing more than the true European Stint. I may here remark that, owing to my specimens in winter plumage from China having been wrongly identified, I have entered this species in my previous lists as *Tringa subarcuata*. The true Pigmy Curlew has been found near Peking; but it visits rarely, if ever, the southern coasts of China; at least I do not recollect ever having met with a white-rumped Stint. Flocks of Dunlins begin to arrive on our shores at the end of August: among these you frequently find adult birds in full summer plumage. The early flocks pass southwards, and are replaced by larger accessions from the north, and in the cold season the shore swarms with them. They feed chiefly, as the inspection of their gizzards testifies, on the small univalve mollusks left in the mud by the receding tide.

140. Tringa acuminata.

Totanus acuminatus, Horsf. Trans. Linn. Soc. xiii. p. 192.
Schœniclus australis, Gould, B. of Austr. vi. pl. 30.

I found this species very abundant on the marshes of Takoo (North China) in August. At the end of that month a few may always be discovered hurrying down our coasts southwards. They return to the north as late as May. On the 18th and 21st May I procured several specimens. These appear identical with the Australian bird. Length $8\frac{4}{10}$ in.; wing $4\frac{9}{10}$; tail $2\frac{3}{10}$. Bill 1; tarsi $1\frac{2}{10}$; apical half of bill purplish black; basal half olive-brown, with a tinge of flesh-colour. Legs yellowish olive, with black claws.

141. Tringa platyrhyncha, Temm.

Flocks of this bird were frequently met with on the south-west shores in September. Most of those I procured were in partial summer plumage, with more or less freckled breasts.

♂, shot 2nd September. "Length $6\frac{8}{10}$ in.; wing $4\frac{2}{10}$; bill along culmen $1\frac{2}{10}$. ♀. Length $7\frac{1}{2}$; wing $\frac{3}{10}$; bill along culmen $1\frac{3}{10}$. Bill blackish mud-green; inside of mouth dark flesh-colour. Tongue long, rather broad, and somewhat concave. A double row of inverted papillæ runs down the centre of roof of mouth, nearly its whole length. Legs yellowish grey, with dark leaden-grey tarsal joints and toes; claws black. Body abounding in fat. Gizzard oval, with moderate lateral tendons; epithelium very thin, of a dark mud-green stain, containing marine vegetable substances, with no pebbles or small stones. Intestines 18 in. long; cæca $1\frac{2}{10}$ from anus, about $1\frac{3}{10}$ long."

142. Tringa temminckii, Leisler.

A common winter visitant to the inland waters and marshes.

143. Tringa damacensis.

Totanus damacensis, Horsf. Trans. Linn. Soc. xiii. p. 192.

Tringa subminuta, Midd. Sib. Reise.

This is also one of the hurrying passers-by that run to winter in more southerly latitudes. It passes in September, to return in May. It is never to be seen in large flocks, nor are the flocks numerous. Indeed I may say that this is one of our rarest Snippits. I only procured one specimen in Formosa.

144. Tringa albescens, Gould.

Schœniclus albescens, Gould, B. Austr. vi. pl. 31.

This species is pretty numerous on our marshes in September, but leaves very shortly for more southern latitudes. It winters in the Indian Archipelago, whence Mr. Wallace has brought home numerous examples. In summer it retires to breed in Kamtschatka and Northern Mantchuria, passing the coast of South China hurriedly in May. I procured abundant examples of it in the south-west marshy lands of Formosa, but most of them were either immature or almost moulted into the winter dress. I have, however, five skins, procured at Amoy in May, in complete summer plumage.

Length $5\frac{8}{10}$ in.; wing $4\frac{3}{10}$; tail $1\frac{9}{10}$, the two central rectrices exceeding the lateral feathers by $\frac{4}{10}$ in. Bill $\frac{7}{10}$ in.; bare tibia ·47; tarsus ·73. Bill and legs olive-black. The two central rectrices exceed the one that succeeds by $\frac{2}{10}$ in.; the second feather $\frac{3}{10}$ in. longer than the three next, which are equal in length; the outermost feather is $\frac{2}{10}$ in. longer than these; the tail thus presents a very irregular tip. In its *winter* plumage the upper parts are light blackish grey, many of the feathers with dark centres more or less apparent; the feathers of the back, scapulars, and wing-coverts are more or less margined with white. Quills blackish brown, with white shafts; the primary coverts largely tipped with white, forming a conspicuous bar on the wing; secondaries tipped and margined with white, a bar of white running across their bases. Central upper tail-coverts and two central rectrices black, the latter edged with whitish; the next feather lighter, and the rest of the tail very pale brown, with white edges; remaining tail-coverts white. Axillaries pure white, the carpal edge being barred with black. Before the eyes and all the under parts pure white; greyish on the sides of the breast. From *T. subminuta* this species can be distinguished, in every plumage, by the shortness of its toes, and from *T. temminckii* by the shape of its bill.

In summer the head, back, scapulars, and tertiaries become strongly edged with chestnut; and all the white parts of the face and neck, down to the breast, become fine chestnut rust-colour. The lower breast is sparsely spotted across with black, and a few black streaks occur on the flanks and lateral upper tail-coverts. In this plumage it has more affinity with a very differently shaped and larger form, the *T. subarcuata.*

All the specimens of this bird dissected were thickly coated with fat, as most migrating birds are. Their stomachs were roundish, compressed at sides, with strong lateral tendons, and contained remains of small shells, sea-weed, a few maggot-like worms, and minute stones. Intestines $12\frac{3}{4}$ in. long; cæca $1\frac{1}{10}$ from anus, left one $1\frac{3}{10}$ long, right one $\frac{9}{10}$, cylindrical, $\frac{1}{10}$ wide.

The small parties of these birds that visit our salt-marshes rise altogether, when disturbed, with a loud twittering note. When one is wounded, its companions fly round and about it to try and render it assistance, in the manner of Curlews, and often keep by the fallen until it dies, thus too frequently endangering their own lives. I have not observed this sympathy with the distress of its fellows displayed by any other species of *Tringa.*

145. CALIDRIS ARENARIA.

Charadrius calidris, L.
Tringa tridactyla, Pall.

These also pass our coast early, and return late. Very few seem to remain on our shores the winter through.

146. STREPSILAS INTERPRES, L.

Arrives in small flocks, and departs about the same season as the Sanderling. I dissected a male, and found its trachea, before dividing into the bronchi, formed into a bony bulb about $\frac{2}{10}$ in. in diameter. Liver very large. Stomach containing only a few particles of sand. Intestine $18\frac{1}{2}$ in. long; cæca $1\frac{2}{10}$ from anus, about $1\frac{3}{4}$ long. Several white leech-like entozoa, $\frac{1}{2}$ in. long, occurred about the stomach and liver.

147. Lobipes hyperboreus, L.

I procured a specimen of this Phalarope, as it sat floating and washing itself in a little stream near Apes' Hill in November. It was in company with one other, which flew screaming away. I watched them for some time before I fired, and was much delighted with their pretty graceful movements. At Tamsuy I procured three examples, 14th March, out of a flock that were feeding on the shoals of our river. A few of these carried indications of the summer plumage, some of the feathers of the upper parts and neck being marked with red. "Length $7\frac{2}{10}$ in.; wing $4\frac{1}{2}$; tail $2\frac{1}{10}$. Under tail-coverts reaching a little beyond the tail. Bill black. Iris deep olive-brown. Legs exteriorly deep bluish grey, with black claws; interiorly yellowish grey, washed with deep leaden at the joints. Ear nearly oval, as large as eye, the skin of it elevated, showing the operculum on the lower part of the circle; the surrounding skin purplish grey. Inside of mouth flesh-colour, the tongue being finely pointed and bluish grey. Wings reaching to a little beyond the tail."

148. Scolopax rusticola, L.

Woodcocks are said to occur occasionally during winter on the hills. I have never met any; but there is no reason why they should not visit the island, as they are found pretty commonly about Foochow and in South China.

149. Gallinago scolopacina, Bonap.

Scolopax gallinago, L.

Gallinago uniclava of my previous lists.

150. Gallinago stenura, Temm.

I procured specimens of both these at Tamsuy in March. A few, especially of the latter, stay to breed in our marshes.

151. Gallinago megala, Swinhoe, Ibis, 1861, p. 343.

This Snipe I found abundant about the marshes on the road to Peking, in August and the beginning of September. In the latter month a few may always be found all down the China coast; but they do not remain long, evidently seeking much more southerly regions where they pass the winter, and not returning past our shores again till April. I fancy that the Great Snipe, procured from the Indian Archipelago, will consequently be found to be of this species. They are not so large as European Great Snipe, but heavy Woodcock-like birds, with the tibiæ feathered almost to the joint. They generally occur singly, but I have put up two or three at a time. When flushed, they rise somewhat clumsily, with a loud cry, and hurry away with a low, almost straight flight. I procured a fine male specimen from the marshes near Taiwanfoo, on the 10th September 1861. "Length $11\frac{2}{10}$ in.; wing $5\frac{6}{10}$; tail $2\frac{1}{2}$, composed of 20 feathers, 10 broad central ones and 5 narrow lateral ones on each side. Bill along culmen $2\frac{1}{2}$ in., along edge of lower mandible $2\frac{3}{10}$; tarsus $1\frac{3}{10}$; mid-toe $1\frac{1}{2}$. Legs light yellowish grey, with blackish brown claws. Bill light yellowish brown for basal two-thirds, yellower on base of under mandible, blackish brown on apical third. Iris dark umber-brown. Ear placed directly under the eye, triangular; operculum quite exposed; skin of ear purplish brown. Rim round the eye the same. Inside of mouth ochreous flesh-colour. Stomach a long irregular oval, lined with a thin furrowed epithelium, containing one worm in a mass of mud-like indistinguishable matter. Cæca 2 inches from the anus, $\frac{2}{10}$ long by $\frac{1}{10}$ wide. Intestine 22 in. long, from $\frac{2}{10}$ to $\frac{4}{10}$ in thickness."

I have compared my specimens of *G. megala* from Peking, Amoy, and Formosa with the Australian Great Snipe (*G. hardwickii*) shot by Capt. Blakiston at Hakodadi, North Japan, and with another of the same species from Australia, from Mr. Gould's collection. The Australian bird is larger than ours, has a bill more spatulate at the end, like that of *G. scolopacina*; the tibiæ are bare to a greater extent, and the tail contains only sixteen feathers, of which the outermost is the only one much narrowed. The bill of our bird more resembles that of *G. stenura*, to which it also assimilates in the form of its tail.

152. IBIS NIPPON, Schlegel, Faun. Japon.

These birds are by no means regular in their visits. At the close of April, a small party of some half-dozen birds were frequently to be seen probing the mud of the river-shoals at Tamsuy. I was not, however, fortunate enough to procure an example. I do not think they breed on the island. The birds of the year are of a smoke-grey, deep on the head and neck, and nearly white on the wings and under parts.

153. **Platalea major**, Schlegel, Faun. Japon.

A pair or more of large Spoonbills were frequently to be seen, the winter through, on the Tamsuy river. From their size I take them to be of this species, but I did not obtain any specimens. I may here remark that a specimen I procured in Swatow, China, has no transverse grooves on the bill, and answers more nearly to the Great Spoonbill of the 'Fauna Japonica' than to the European species.

154. **Ardea cinerea**, L.

A. leucophæa, Gould, B. of Austr. vi. pl. 55.

A common resident species.

155. **Herodias alba**, L.

Ardea modesta, J. E. Gray.

Common in winter, and probably the year through, though I have no evidence of any breeding with us. This large white species in my Canton List was wrongly referred by the editor of the 'Ibis' to *H. intermedia*. The large Egret of South China is the *Ardea modesta*, Gray, which Mr. Blyth considers identical with *H. alba* of Europe.

156. **Herodias garzetta**, L.

A very common resident species, associating, especially in summer, in large flocks, and breeding in company in our bamboo- and other plantations. I procured, on the 14th March, a fine male in full plumage, of which I made the following note:—"Entire length $24\frac{1}{4}$ in.; wing $10\frac{3}{4}$; tail $3\frac{3}{4}$, of 12 nearly equal feathers. Upper mandible, edge and apical half of lower, black; the remainder of lower pale grey, becoming flesh-colour towards base. Cere pale greenish yellow; eyelid greyish blue and semitransparent, the eye appearing through; the edges of the eyelids yellow, with an inner narrow edge of blackish. Iris clear light yellow, having an outer circle of golden, the whole bounded by greyish black. Inside of mouth flesh-colour, the tongue being yellowish, and the sides of the roof and the angle of rictus being yellow; the roof of upper mandible and the inside of the *crura* of lower black. Skin about ear smoke-grey; ear-covert roundish, about $\frac{2}{10}$ in. wide, the aperture occupying the semicircle nearest the eye. Legs black, the toes clayey ochre, with a tinge of greenish; claws and the scutes adjoining black."

157. Herodias eulophotes, Swinhoe, Ibis, 1860, p. 64.

This species, which I first discovered and noted as a rare bird at Amoy, was pretty common on the Tamsuy river, being frequently seen in parties of four and five, and occasionally in company with the *H. garzetta.* They are never to be met with in very large flocks. They nest, in company with the common species, on the branches of trees; at least, I have watched them in the same heronries, though I have never succeeded in taking their eggs. In confinement they object to the approach of strangers, starting back and ruffling their feathers, and pecking with savageness at the hand put coaxingly forward. This and the *H. garzetta* feed almost entirely on fish, shrimps, and *Squillæ*; whereas the Yellowhead (*Buphus coromandus*) and all the *Ardetta* group are to a great extent omnivorous. I have kept alive most of the *Ardeidæ* that occur in China, and I have noticed that the Egrets would pine away unless small fresh fish were constantly supplied to them: they would not take flesh or bread as a substitute. All the others, *Ardea cinerea* included, would make a meal off bread and meat when fish failed. I procured both males and females of this species at Tamsuy. The female is a little larger, but they are not otherwise to be distinguished.

This Egret has a fine clear yellow bill in summer, becoming tinged with brown in winter. Its cere is tinged with green and purple; its irides light pearly yellow. Its legs are in summer black, in winter greenish brown; its feet and claws are greenish yellow. From *H. garzetta* it can at all seasons be distinguished by its light and shorter bill, and by its much shorter legs; but in summer its fine full crest marks it at once as different, as well as the scantiness of the dorsal plumes, which do not, as in that species, exceed the tail, and turn feathering upwards. It has considerably more affinity with *H. candidissima* of America; but that bird is of different proportions, and has a black bill and feet. This bird, in common with most of the Heron tribe, loses it crest early in August; and the other nuptial plumes are then much worn and scanty, and soon drop away. The breeding-season is then over.

158. **Buphus coromandus** (Bodd.).

It is my opinion that, under the term Russet Heron, two species are confounded, the one being found in South Europe and Africa, and the other in India and its archipelago, and, as a summer visitant, in China. Our Eastern bird can, even in its white winter plumage, be distinguished by the greater length of its bill, which is generally half an inch longer, and by its more naked tibiæ. In the summer plumage the distinctness is marked. The African has the crown of its head and its under neck only buff-colour, tinged with a vinaceous hue. In ours the entire head, neck, and breast are clothed with orange-coloured feathers, those of the breast only having a slight vinaceous tinge: the centre of the back is also orange; but the long loose dorsal plumes are light vinaceous pink. I see that the European form has been distinguished by M. Roux as a different species, under the term *Ardea veranii*, and that of Java by Horsfield as the *A. affinis*; but why multiply synonyms? *A. russata* has been applied by Temminck to the European bird, and *A. coromanda* is an old name for the Eastern form. All the specimens of undoubted European birds I have examined are alike, and are easily to be distinguished from the Asiatic, especially in summer plumage.

This species arrives in Formosa in April in very large flocks, which do not separate, but breed together, feed together, and remain in constant company till they leave our shores again in the beginning of October. They are very partial to insects, and may be frequently seen seated on the backs of and near cattle, catching the flies that swarm about them. I have found in their stomachs maggots, grasshoppers, and many other insects; but they do feed on fish when they can get them, though they are by no means such assiduous fishermen as many of their brethren are. They are much tamer than most Herons, and so are easily approached within shot. In confinement they soon become tame and docile, and will feed readily on almost any food offered. They often build in company with the Egrets and other Herons on the branches of trees, fighting and squabbling together, and robbing one another's nests of materials in much the same manner. The nest is merely a small flat pannier of twigs, on which three eggs are usually laid. The eggs are bluish white, with a tinge of green, much lighter and rather larger than those of *H. garzetta.* In South China and Formosa this bird, as I said before, is only found as a summer visitant, wending southwards in winter, which season it doubtless passes in India and its archipelago, though I can find no note of that fact in any work.

Adult, shot 1st May. "Length 15 in.; wing $9\frac{1}{2}$; tail $3\frac{3}{10}$, square, of 12 feathers. Bill, lore, and eye-rim orange-yellow, the two latter covered with a thin powdery skin; region of the eye somewhat tinged with blue. Iris bright yellow. Inside of mouth yellowish flesh-colour. Tibia blackish at the top, the remainder, with the knees, greenish; tarsus and toes dark brown, and both obscurely washed with green, paler on the soles; claws blackish brown."

159. BUTORIDES JAVANICUS (Horsf.).

"*Ardea scapularis*, Wagl.," v. Schrenck.

This solitary, skulking, Bittern-like species is abundant in all marshy grounds throughout Formosa, a few also occurring in winter. It feeds by day, prowling about in the water-covered fields of paddy, searching for tadpoles, shrimps, and small fish, as well as for grasshoppers and many kinds of insects. At night it roosts on long reeds and bamboos, or on the branches of trees. On these I have seen it nesting. I procured one egg at Taiwanfoo, which is of a pale duck's-egg colour, 1·63 in. long and 1·25 broad. The young are more like the adult than is usually the case among the lesser Herons.

I procured two young examples in September. The dark green of the head is striped longitudinally with ochreous; the cheeks are also streaked. The under parts, instead of being a uniform greyish brown, are broadly streaked with that colour, ochreous, and white, which, however, blend into one another. A few of the feathers of the back, scapulars, and lesser coverts carry one spot of ochreous apiece at their tips. The colours generally are scarcely so bright as in the adult, but in other respects they are very similar. Iris clear yellow. The lore, edge of upper and basal half of lower mandible greenish yellow; the rest black. Legs and toes yellowish green, with blackish claws.

These birds are not easily scared. When observed, they run behind a bank or among the reeds, trying to walk out of danger's way. It is only on sudden alarms that they take wing; they then do not fly right away, but drop at no great distance into the first cover.

160. ARDEOLA PRASINOSCELES, Swinhoe, Ibis, 1860, p. 64.

Professor Schlegel, of Leyden, who is well acquainted with the *A. speciosa* of Java, and has the credit of being anything but a species-maker, agrees with me in considering this bird distinct from the Malayan form. I feel myself therefore the more justified in disagreeing with the opinions of such high authorities as Messrs. Sclater and Blyth, as expressed in this Journal (vol. iii. p. 52). The species of Squacco Herons will therefore now stand *A. comata* (Pallas) of Africa and Southern Europe; *A. leucoptera* (Bodd.) of India; *A. speciosa* (Horsf.) of Java; *A. malaccensis* of Malacca and the Deccan (*A. grayi*, Sykes); and *A. prasinosceles*, Swinhoe, of China. Our *Ardeola* is a constant resident in South China and Formosa, frequenting wet paddy-fields during the day, where they feed on grasshoppers and almost anything they can catch, and roosting at night on the banyan and other large trees. They are called *Tsan-la*, or Rice-field Herons, by the Chinese, and Paddy-birds by Europeans. They may often be seen together in the same field, as they are a common species, but they neither associate in flocks, nor breed in company. Their wicker nests are usually placed on the high branches of banyan trees; and their eggs, seldom exceeding three in number, are bluish white and rather large. The young birds are splashed with dusky on the wings, but they are otherwise very similar to the adult in winter dress. In September the summer plumage begins to fall away, and is replaced by the winter feathers, in which latter dress, as has been before remarked, the several species of the genus are almost undistinguishable from one another. In April the complete nuptial dress is again assumed. *A. speciosa* differs from our species in having a whitish head, neck, and occipital plumes, instead of these parts being of a bright brownish-red colour. In fact it is intermediate between the Chinese bird and the *A. malaccensis*, which has the head and neck yellowish grey, and the back vinaceous pink, and not blue. *A. leucoptera* has the blue back, but the head and neck are pure white.

161. ARDETTA FLAVICOLLIS (Lath.).

Also a solitary species, and rather rare in Formosa. It frequents rice-fields, and places its nest on low bamboos. It is in habits a good deal similar to *Butorides javanica,* but I have not had many opportunities of watching it.

162. ARDETTA CINNAMOMEA (Gmel.).

This species is abundant enough in summer, a few only remaining the winter through. The adult plumage is dark cinnamon above, light yellowish cinnamon on the lower parts, the breast and belly having dark feathers, forming a median line. The young are dark brown on the upper parts, mottled and barred, on all but the head, with brownish buff. The under parts are buff, striped longitudinally with blackish brown. Quills and tail, in whatever plumage, cinnamon-red. The adult birds carry bars on their plumage often for years, so much so that a pure unspotted-plumaged specimen is almost a rarity. On a young bird, procured in August, I have the following note:—"Bill pale flesh-colour, light purplish brown on the culmen and sides of lower mandible; base of both mandibles, lore, and round the eye greenish yellow. Iris clear yellow. Inside of mouth flesh-colour. Legs greenish yellow, yellower on the under tarsus and soles, dingy on the toes, and brownish on claws. Middle claw, in this fledged youngling, has no pecten. Plumage Bittern-like, with brownish red wings, tufts of greyish down still adhering to many of the feathers. In yawning, this young bird expanded the crura of its under mandible."

The Cinnamon Heron rarely, if ever, flies up into large trees, generally preferring bushes, small bamboos, or the ground to roost on. It builds on low stations, and generally alone. It is a solitary bird, and never seen in company with any, except its mate. It is, like the other *Ardettæ,* not particular as to its diet, eating whatever of small life the rice-field yields.

163. ARDETTA SINENSIS (Gmel.).

I only procured one of this species, and that was in April in Tamsuy. It would appear to be rare in Formosa. As a summer bird it is particularly common in the marshes near Amoy, China. They are there seen, numbers together, scattered on the tops of the reeds and mangroves, each bird standing on a branch, often on one leg, with head sunk between the shoulders, the bill only moving as on a pivot, and describing a semicircle, as the bird extends its vision. They are tame, and not easily disturbed. If alarmed by loud cries, they flutter and drop quietly to the roots of the reeds. When they are made with difficulty to take wing, they never fly far. I have generally found them at Amoy in May, but could never ascertain where they bred, though the young, in mottled and spotted Bittern-like plumage (*A. lepida*, Horsf.), were common enough a little later in the year. This species is very similar to *Ardetta minuta* of Europe, of which it is the representative form in Asia.

164. NYCTICORAX GRISEUS (L.).

I fully expected to find in Formosa the Red-backed Night-Heron of the Philippines, but was annoyed to discover that it was still our European friend that prevailed. This bird was building abundantly in the fine old banyans in the city of Taiwanfoo; and as my hunters shot them without mercy, I had opportunities of examining them in all three plumages—the spotted first-year, the light grey second-year, and the adult, with all manner of transitional stages. The iris is at first greenish yellow, gradually changes to brownish straw-yellow in the second plumage, and then deepens and changes to the clear pink vermilion of the mature bird. The bill of the adult is black, with yellowish edges to basal two-thirds of gonys. Lore at base of bill grey, greenish near and round the eye. Pupil horizontally ovate, expands in the dark and at death to nearly full extent of the eye, which projects much. The legs of immature birds are green; in the second plumage they are strongly tinted with yellow ochre on the under tarsi and soles, and often more or less grey throughout. In the adult they become a uniform orange-ochre, the claws always being black.

In summer, when the young require incessant feeding, it is not unusual to meet the Night-Heron abroad during the day, searching for food; but at other seasons it is strictly a night-bird, roosting in daylight in company, among osiers or bamboos, on the banks of inland waters, and rambling about in the twilight and darkness of night in search of food. In the darkest nights their loud *kwa* may be heard as the birds are winging their way overhead. The Chinese call them *Am-kong cheow*, or bird of darkness, and look upon them with superstitious dread. They are thought to have some connexion with evil spirits; and as it is the Chinese custom to propitiate the evil demons, that they may not play any of their mad pranks on humanity, so they give protection to these their birds. In large cities superstition is laughed down, and not so prevalent; we therefore, in the Formosan capital, were not thought to commit any great sin in disturbing the ill-hallowed bird; but among the country-people at Tamsuy, the villagers for miles round would flock to us when we were out with guns, and beg us not to disturb a colony of Night-Herons that had commenced nesting-operations in a fine bamboo-grove. This plantation of tall bamboos, mixed occasionally with longans and other trees, was on a hemp-farm of some four acres, which it entirely encircled. The flock of Night-Herons, about 200 or more in number, showed themselves about this wood for the first time in March. For a fortnight they merely made it their roosting-site for the day. In April all was excitement, fighting and building; and towards the middle of the month many of the birds were laying. In the first few days of April a large colony of Egrets (*Herodias garzetta*) came to the same trees; and about the middle of the month a large flock of Yellowheads (*Buphus coromandus*). At first the confusion was very great, the flocks of the several species coming into constant collision; but before the end of April all seemed amicably arranged, and you could often see on the same tree several nests of the three distinct Herons, the females of each sitting, and the males standing by to protect. This large mingled heronry was a most interesting sight; and many times on a fine evening, I have taken boat and crossed over to the Heron-farm to view it. The farm-house stood at one end of the plantation; and its inhabitants were always courteous and kind, and allowed me to roam about their grounds as I pleased. A small wood of large trees stood close to the cluster of huts, and these a party of Grey Herons (*Ardea cinerea*) had made their home; and here and there among the bamboos you could observe a few of the Yellow-billed Egret (*H. eulophotes*). Thus, within the precincts of these few acres, one had the opportunity of watching and comparing the habits of no less than five interesting species of Herons. Few naturalists, I fancy, could ever have had such an opportunity as this; but my time was short, and I was obliged to leave the country before the *A. cinerea* and the *H. eulophotes* had commenced laying. The bamboos were mostly 30 or 40 feet high, bending and curving in all directions, and on almost every available spot throughout their quivering lengths the wicker nests were placed. As you made your way through the dung-stained herbage underneath, clouds of all the several species rose from the trees above, and hovered about the air croaking and screaming. As soon as you had stalked on a few paces, the birds alighted again on their respective positions, and continued their avocations as before. The bamboo is too unstable a tree to trust one's weight to at the height required to be reached for the nests, and they were moreover covered with prickles. I was therefore obliged to look to the dark-leaved evergreen, the Longan, for eggs. Out of one of these I procured several eggs of three species, the *B. coromandus*, the *H. garzetta*, and the *Nycticorax*. There were always three in each nest. The eggs of the Night Heron were the largest and greenest; those of the Yellowhead pale bluish, almost white, and finer grained; those of the Egret smallest and bluish green. I have seen many heronries in different parts of China and Formosa, but none that I ever saw were so large or so excitingly interesting as the one on the Tamsuy river. It was a sight not easily to be forgotten.

165. GALLICREX CRISTATUS.

Gallinula cristata, Latham.

G. plumbea, Vieill.

G. lugubris (male) and *G. gularis* (female), Horsf.

This was not a rare bird on the rice-fields and marshy tracts near Taiwanfoo in summer, and I procured both birds and eggs. It is of shy and Crake-like habits, running with velocity through the damp grass and rushes.

♂, in summer. "Length 16 in.; wing $8\frac{4}{10}$; tail $3\frac{4}{10}$, of ten feathers. Bill bright yellow, washed, on the upper mandible chiefly, with light greenish. Frontal crest $1\frac{4}{10}$ in. long, and with the loral space coloured vermilion. Inside of mouth flesh-colour. Rim round the eye deep brown; iris bright chestnut. Legs greyish leek-green, greyer on the tarsal front, and paler on the soles; claws brown."

♀, brought alive, 12th August (caught off nest). "Length 13 in.; wing $6\frac{1}{2}$; tail $2\frac{1}{2}$, of ten feathers, somewhat graduated. Bony crest and base of culmen fleshy wood-brown, rest of culmen brownish; bill light greenish yellow, flesh-coloured on gonys, and yellow at edges. Inside of mouth flesh-coloured; tongue fleshy, furrowed down the middle, very gradually narrowing to the tip, which is obtuse, horny, and setaceous. Iris deep yellowish hazel; eyelids ochreous brown. Ear small and round, operculum quite exposed. Legs and toes light dusky yellowish green, with a wash of grey; claws brown."

Its nest consists of a pile of rushes and flags, placed at the roots of growing rushes in the marsh, and contains usually from seven to eleven greenish cream-coloured eggs, blotched and spotted with cinnamon-red. Many are, however, almost entirely washed with a strong cinnamon-colour, blending the blotches together. Length 1·75 in.; breadth 1·25.

The dissimilarity of size, as well as of colour, in the sexes of this bird has led many of the older naturalists to consider them distinct species. It is distributed, according to Blyth, throughout India and the Malay countries. In South China it is not an uncommon summer visitant.

166. PORZANA FUSCA, L.

P. erythrothorax, Schlegel, Faun. Japon.

Abundant about Taiwanfoo. It lays over seven eggs, on a reed-formed nest at the roots of rushes. The eggs vary in ground-colour from nearly white to deep cream, and are sparsely spotted and freckled with cinnamon-red and light purplish grey. Their average dimensions are 1·2 in. by ·85; they are in some cases attenuated at both ends.

167. GALLINULA PHŒNICURA.

Rallus phœnicurus, Pennant.

G. javanica, Horsf.

These birds were not uncommon about Taiwanfoo in summer, and at Tamsuy I procured several examples in March; but I cannot be sure as to their spending the winter in Formosa. In South China they are, I believe, birds of passage. Their eggs vary in shade of cream ground-colour, and are spotted and blotched, in some cases only freckled, with cinnamon-red and light purplish grey. Length 1·65 in.; breadth 1·15.

168. GALLINULA CHLOROPUS, L.

G. parvifrons, Blyth.

The European Water-hen is found on most inland waters in Formosa; but I did not obtain the Coot. I procured a male and female off a large pool near Apes' Hill. Legs yellowish green; irides brown.

169. RALLUS STRIATUS, L.

R. gularis, Horsf.

A live female of this Rail was brought to me on the 27th July, at Taiwanfoo, with seven eggs; she had been caught on the nest. The eggs are of a pinkish cream-colour, varying in shade, sprinkled with purplish grey, and blotched with Indian or cinnamon-red, especially at the larger end. They are, for the most part, rounder than the eggs of Gallinules. Length 1·3 in.; breadth 1.

♀. "Bill bright madder-pink on basal two-thirds, light violet-grey on apical third; culmen dark. Iris yellowish chestnut. Inside of mouth pale pink. Ear small, roundish, and exposed. Legs dusky leaden grey, tinged with greenish and brown."

The male is a very little, if at all, smaller than the female, but has brighter bill and legs; in other respects they are similar. The hind necks of our Formosan birds, as well as of specimens from Siam, are bright chestnut. This colour scarcely shows at all in birds that I have seen from India; but specimens may vary in this respect, and I have seen no large series. Mr. Blyth considers the Malayan and Indian birds to be the same.

170. Larus crassirostris, Vieill.: Bp. Consp. p. 212.

L. melanurus, Schlegel, Faun. Japon.

This is the first of the Gulls that arrive at the mouths of our rivers and on our shores. After severe N.E. winds, numbers of the two following reach us; but of all three species, young birds bear a large proportion to those in adult plumage.

171. Larus niveus, Pall.

L. kamtschatkensis, Bp. Consp. p. 224.

L. canus major, Middend.

172. Larus cachinnans, Pall.

L. fuscus of my Amoy List, Ibis, 1860, p. 68.

173. Chroicocephalus kittlitzii, Bruch.

This small black-hooded Gull is at once to be distinguished by its thick, heavy black bill. It frequents our rivers in flocks in winter, flying up stream when the tide retires, and feeding upon the exposed shoals.

174. Chroicocephalus ridibundus (L.).

A few of these occur occasionally in company with the last, but they are comparatively rare.

175. Hydrochelidon indica (Steph.).

Sterna hybrida, Pall.

S. leucopareia, Natterer.

This species, distributed throughout Asia and its islands, and known to British ornithologists by the name of the Whiskered Tern, was not uncommon on the marshy lands of S.W. Formosa. I have not yet noted it in China, though doubtless it must occur there. A fine male, brought to me 28th August, had the bill deep brownish lake-red; legs and toes Indian or madder-red, with black claws. Its stomach contained several large larvæ of a water beetle (*Dytiscus*, sp.) and a few small fish. Intestines very thin, 16 inches long, and devoid of cæca.

The Black Tern of S. Europe, *H. nigra*, L. (*S. fissipes*, Pall.), wrongly referred in my Amoy List (Ibis, 1860, p. 68) to *H. javanica*, Horsf. (a species common throughout China), did not occur in Formosa.

176. Sternula sinensis (Gmel.).

S. sumatrana, Raffles.

The true Little Tern, *S. minuta* (L.) is not an uncommon winter visitant to the south coast of China, and occasionally comes to our coast during that season. But in Formosa we have a resident species quite distinct, with constant dark bill and legs, and grey on the upper tail. I have several skins of this species, procured in *summer* at Taiwanfoo; so that there can be no doubt of the plumage not being matured. These I have compared with the American *Sternula* and the Australian *S. nereis*, Gould, but both these are much more closely allied to *S. minuta*. There are, however, specimens in the East Indian Museum, marked *S. minuta*, from the Indian Archipelago, which appear to me identical with our bird. These have been noted by Raffles as *Sterna sumatrana*. Four adult specimens were brought to me on the 29th August. They all varied in the length, colour, and even shape of the bill. In one the bill was a uniform blackish brown; in two others the bills were of a brownish-yellow ground-colour, washed over with black; and in the fourth the apical half was blackish grey, and the basal half brownish ochre. The legs and toes of this last were light reddish brown, with orange under-tarsi and soles, the claws being blackish brown. The other three had ochre-brown legs and toes, with more or less orange on their under-surfaces. In none of my nine specimens is there any mottling of immaturity, and most of them have the tail-feathers much worn. The stomachs of those dissected contained small shrimps and a few small fish. Intestine 12 inches long; cæca situate $\frac{8}{10}$ from anus, about $\frac{2}{10}$ long. Length of bird 9 in.; wing $7\frac{1}{4}$; tail 4, well forked, the four central rectrices being short and obtuse, the four lateral on each side pointed and graduated outwards, the outer one being $1\frac{7}{10}$ in. longer than the central. Crown, nape, and loral streak black, leaving the forehead, a partial eyebrow, and the moustache-streak white. All the under-parts pure white. Upper parts, including rump and central rectrices, pale French grey. Primary quills with white shafts; the first two black, with broad white borders to the inner webs; the next two blackish grey, with narrower borders; the rest of the same colour as the back. Secondaries tipped with white. In the winter plumage the black on the crown and lores fades away, leaving only a nuchal band from one eye round the hind neck to the other eye.

When I visited the rocky coast of E. Formosa in 1857, I noticed vast numbers of these birds breeding on the precipitous sides of the cliffs. At that time I wrongly mistook this for the Lesser Tern, which is a bird of more northerly climes, that seeks our shores only in winter.

Since my arrival in England, I have received specimens of this bird from Hankow (Central China). One of the skins is that of a very young bird, and proves that the species breeds also in that locality.

177. STERNULA MINUTA (L.).

A winter visitant to the shores of Formosa.

178. STERNA CRISTATA, Steph.

S. pelicanoides, King.

S. velox, Rüppell.

A large colony of this widely distributed Tern has bred for years on a small island, called Kelung Island, three miles to seaward of the north harbour of Kelung. When at Kelung, in H. M. S. 'Inflexible,' in 1857, large numbers of their eggs were brought to us by fishermen. They were not bad eating. These eggs varied a good deal in colour and markings; but Baron R. K. von Warthausen's able description and figure in the 'Ibis' (1860, p. 127), of some procured in the Red Sea, leave me little to say about them. This bird is common all the year on the north coast, uttering loud hoarse screams as it flaps past.

179. STERNA CASPIA, Lath.

A few visit the coast from the northern latitudes in winter, after severe north-easterly winds.

180. ANOÜS STOLIDUS, L.

In the harbour of Sawo, on the N.E. side of Formosa, a few of these Terns were breeding on the cliffs. One flew into our boat, and was knocked down by a sailor. Another was brought to me alive. In our voyage round the island, I frequently saw parties of them crossing and recrossing our wake, evidently searching for food in the troubled water that the steamer's paddles stirred up in revolving. They always kept a long distance in rear, and made no attempt to board us. Their long wings enable them to skim the surface of the water with great ease and grace.

181. Diomedea brachyura, Temm.

This is the large Albatros of the China Seas, being seen in more or less abundance on every voyage. They travel as far north as Japan. I have never discovered their building-site, though, from their being found at all seasons, I suspect the island or islands are not distant from the south coast of China. The young of this species, of a uniform blackish brown, has been figured in the 'Fauna Japonica'; but its legs are there represented as of a flesh-colour, and its bill pinkish, whereas American writers state that both bill and legs in the living young are brownish, changing to black after death.

The Albatros on wing is never figured correctly. When flying, the wings are curved like the head of a pickax, and it skims the surface, rising and falling with every trough of the sea, with scarce any motion perceptible in the wings, except at their tips. They often sail upwards, and continue in their flight, throwing first one shoulder forward and then the other. In the male of this Albatros, the bronchi, on leaving the trachea, bulge considerably as they run horizontally, then contract and bend forwards and downwards, and lastly, turning sharp round, rise upwards and bulge again before entering the lungs. In the female they are short and simple, without convolutions.

182. Diomedea nigripes, Aud. Orn. Biog. 1839, p. 327.

D. fuliginosa, Gmel., of my Amoy List, Ibis, 1860, p. 67.

This small species, at once distinguishable from the Sooty Albatros, or Cape Hen, by its black feet and the absence of the pale line along the bill, is the representative of that species in the North Pacific and China Seas. Cassin in his 'American Ornithology,' for some unaccountable reason, has confused this species with the black young of the preceding large form. This bird is abundant in the Formosan channel at all seasons. The male is a good deal larger than the female, has a longer and larger bill, and is of a uniform sooty brown, without the white round the bill, about the eye, and on the belly of the other sex. In this species the trachea of the female is simple, but that of the male is terminated by large, swollen, convoluted bronchi. In a male specimen, procured in May, the bronchi ran down right and left, almost straight, for about $1\frac{7}{10}$ in., then took a bend forward for a short space, and narrowed, and lastly, bending inwards and upwards, bulged largely, and entered into the lungs. The proventriculus consisted of a large flabby sac, about 3 inches in length, and $1\frac{3}{10}$ in breadth in the broadest part, lessening to $\frac{1}{2}$ in. before it reached the stomach, which was round and muscular, $\frac{8}{10}$ in. in diameter, and supported by strong circular lateral tendons with radiating muscles. Both the stomach and the proventriculus contained a thick greenish-yellow juice; the latter was stocked with remains of fish, and the former with numbers of small gritty stones, some as much as $\frac{3}{4}$ inch in diameter. In both these were numerous small, thin *Ascarides.* Intestine 8 feet long, and strong, averaging $\frac{3}{10}$ in. in thickness.

I kept four of this species, and two of the *D. brachyura*, alive for some days in my verandah at Amoy, but could not get them to feed. The first few days they used to walk about in a clumsy manner, but afterwards they got weaker and could not manage to rise. Both species had a common habit of stretching the neck and raising the bill upwards, uttering at the same time a loud, hollow-sounded, moaning bellow, as of some animal in pain. The production of this sound seemed to force up oily matter into the mouth, for the birds would go through the movements of swallowing for some time afterwards. Through the day, and often in the night, this miserable moan would be uttered at set intervals. I kept one of this species alive, to see how long he would live without food, and he lived on, week after week, without showing any particular signs of weakness, till about the 20th day. He then began to look shaky, but still obstinately refused to eat fish. On the 29th day he died: but his abstinence from food was in reality greater than that extraordinary number of days; for he had been in the possession of the fishermen who caught him nearly a week before he came to me. When fresh taken in the spring, the birds are particularly fat: but this starved specimen had survived on the gradual absorption of his adipose tissue; for when I dissected him, his flesh was quite hard and dry, with scarce any signs of fat about any part. Birds of prey, and most birds that wander far and seek a precarious living, can survive a long while without food; but I never before heard of such an extraordinary power of abstinence as these Albatroses have proved themselves to possess.

183. COLYMBUS SEPTENTRIONALIS, L.

C. glacialis of my Amoy List, Ibis, 1860, p. 67.

In the winter several of these birds visit our coast from the north. Very few show any indication of the red throat, nearly all being in the winter plumage. This is the only species of Diver I have observed in Formosa.

184. PODICEPS MINOR, L.

P. philippensis, Bonn.

I have a goodly series of Little Grebes, both from Formosa and China, and find them in every way inseparable from the European species. In summer plumage they appear to be identical, many Formosan specimens, like many English specimens, having the under-parts white, and many again washed with blackish. In my opinion they are one and the same. The Dabchick is an abundant resident on the inland waters of Formosa. Other Grebes doubtless visit our coast in winter, but none fell under my observation. I extract a note on an adult male, shot at Taiwanfoo 29th August 1861:—Length $10\frac{3}{10}$ in.; wing 4. Bill black, with a whitish tip. Loose skin at the base, rictus, and intercrural membrane of lower mandible pale greenish yellow. Inside of the mouth light bluish flesh-colour. Iris straw-yellow. Legs blackish grey, with a slight tinge of green.

185. PHALACROCORAX CARBO (L.).

Pelecanus sinensis, Shaw.

This species is not uncommon on our rocks and those of South China during winter. In early spring they assemble in flocks and repair southwards. They are tamed, and employed by the Chinese to catch fish, as every one has read. In a state of domestication they are subject to variations in plumage like most domestic animals.

186. **Phalacrocorax bicristatus** (Pall.).

Carbo violaceus, Gmel.

C. bilophus, Brandt.

This is an inhabitant of Kamtschatka and Japan, and has been ably described and figured in the 'Fauna Japonica.' Occasionally during winter a specimen gets blown down to our northern coast, but it ought hardly to be numbered among the Formosan birds.

187. **Querquedula circia**, L.

A male of this Teal was brought to me alive on 13th March at Tamsuy. "Bill light olive-brown, blackish brown underneath, on the edge round and on and about the dertrum. Iris burnt sienna. Legs ochreous grey, with browner webs and claws." It is a brightly tinted specimen. The whole of the belly is deeply stained with orange-ochre, as I have before observed in specimens of *Q. crecca* shot at Amoy. This was the first time I met with this Duck in China. Our other Ducks are the following:—

188. **Querquedula crecca**, L.

189. **Querquedula glocitans**, Pall.

190. **Querquedula falcaria**, Pall.

191. **Mareca penelope**, L.

192. **Dafila acuta**, L.

193. **Anas boschas**, L.

194. **Anas pœcilorhyncha**, Pennant.

195. **Spatula clypeata**, L.

196. **Tadorna vulpanser**, Flem.

197. **Casarca rutila**, Pall.

198. **Fuligula marila**, L.

199. **Fuligula cristata**, Ray.

200. **Clangula glaucion**, L.

201. **Mergus serrator**, L.

There are, doubtless, other species comprised in the immense flocks of *Anatidæ* that spread down our shores during winter.

None, however, as far as I am aware, stay to breed. Geese and Swans I did not observe; but most certainly some species of these also come to us, as they descend to much lower latitudes on the coast of China. I may here remark that a Black Scoter Duck, shot by Capt. Blakiston on the Yangtsze, turned out to be the American Black Duck (*Œdemia americana*, Swainson), and not the European *Œ. nigra* as one would have expected. I have never met with this Duck, and have not, therefore, included it in my list.

XXXIII.—*A Visit to the Islet of Filfla, on the South Coast of Malta.* By Charles A. Wright.

Starting at 7 a.m., on the 16th of May last, with two friends, in a go-cart from Sliema, on the north side of Malta, we reached the sea-side opposite Filfla at about half-past nine o'clock a.m. Filfla is an isolated rock, less than half a mile long, and scarcely a quarter broad, situate on the south coast of Malta, some three or four miles off the shore. On our way from Sliema to the sea-coast, we saw a great many *Corvus monedula*, the only sedentary representative of the Corvine family in Malta. I thought I recognized two or three *Corvus frugilegus*, but, owing to the distance, was not quite sure. The Rook is a bird of passage here, arriving in autumn, and sometimes staying the winter and part of spring. I noticed it this year, beyond all doubt, as late as the beginning of April. It generally leaves long before that time, probably to find a suitable breeding-country further north. In the fields by the roadside several Common Buntings and Short-toed Larks were breeding, and a few Swifts were chasing insects in the higher regions of the air. A Turtle-Dove, a Spectacled Warbler, and several Spotted Flycatchers caught our view as we drove along, and every farmhouse had its colony of noisy Sparrows (*Passer salicicola*). The Spectacled Warbler (the only indigenous Warbler of the island) is also now breeding. On nearing the cliffs on the southern coast, we again fell in with our friends the Jackdaws in great numbers. They appeared to have nests or young ones, as several of the old birds were carrying something in their mouths. A pair of Blue Thrushes (*Petrocincla *cyanea*) also had their nest in the same neighbourhood. Stepping over the rocks, I disturbed a Black Snake (*Coluber viridiflavus*) sunning itself, but it wriggled away into a hole in a wall before I could catch hold of it. This, as well as the other Snake (*Cœlopeltis leopardina*) found in Malta, is quite harmless. In a narrow inlet of the sea, where there is a slip for hauling up boats, we found a little *caïque*, or native fishing-boat. We agreed with the owners for five shillings that they should take us over to Filfla and bring us back. The weather was very favourable for our purpose. The heat was moderate, and the sea smooth, though with a slight swell. Our crew, consisting of two stout lads, rowed us over in fifty-five minutes. We made for the best landing-place on the south side of the islet, where the sea was perfectly smooth. The Rock-Pigeons, disturbed at our approach, flew out of the holes and crannies, and wheeled round to the other side of the rock out of sight. A few screeching Swifts were flying high overhead. It is not often one gets a shot at the Pigeons from the boat. The huge masses of rock that have fallen from the sides of the island intervene, and place a considerable distance between the birds and the sea. The island itself, too, is upwards of 150 feet high, and the Pigeons mostly affect the more elevated parts. Just before landing, a Turtle-Dove (*Columba turtur*) flew out within shot, and fell to the gun of one of our party. The first thing that strikes the naturalist on setting his foot on shore are the innumerable black Lizards that dart across his path, or lie basking in the sun's rays within a few feet of him. On reaching the higher parts they become even more plentiful, and are to be seen moving quickly away in all directions at every step he takes, hiding themselves in the crevices of the rocks, or under the stones and such wild plants as are sufficiently foliaceous to afford them momentary protection. Such plants are the sea-samphire (*Crithmum maritimum*), very abundant on the lower parts of the island; and the thorny artichoke (*Cynara horrida*), exceedingly plentiful on the rocky plateau on the summit, which is almost entirely covered with the rich green leaves of this handsome thistle, now in flower. As might be expected, the *Scilla maritima*, or common squill of commerce, is not uncommon; and I also observed a kind of wild onion or garlic, the stem rising to a height of more than five feet. The familiar *Silene vespertina* and pretty little *Anagallis arvensis* (both the red and the blue varieties) were also seen. They were very much stunted, doubtless from the exposed nature of the situation. I discovered several very healthy and flourishing plants of the *Ecbalium elaterium,* or squirting cucumber. Many of the fruit were ripe, as evinced by their going off, like a hair-triggered pistol, at the slightest touch, discharging their seeds with great force. This is an interesting instance of the innumerable and various ways adopted by nature for scattering the seeds of plants. Another interesting plant noticed is the Caper, but of which species of the two found in Malta I did not ascertain. I have also to mention a large kind of umbelliferous plant pretty common, and several other small plants unknown to me. I took care, however, to bring home specimens. The above, I think, comprise nearly all the scanty flora of this rocky islet. The Black Lizard of Filfla is perfectly black on the upper parts, spotted with green and blue. It is considered to be merely a variety of *Podarces muralis,* of Italy and the Maltese Islands; but no one seeing the two could ever mistake one for the other. Its black colour and larger size distinguish it at a glance. It is what naturalists, in the absence of a better term, may call a "permanent local variety;" but in what respects a permanent variety differs from a species I have never been able to find out. The Filfla Lizard affords a striking and curious illustration of the variation of species produced by local causes.

In an ornithological way, considering the small size of the rock, and that the migratory season is nearly over, we were not disappointed. Besides the Pigeons (an admixture of escaped Domestic Pigeons and the Blue-rock) we saw about a dozen Turtle-Doves (*Columba turtur*) that had doubtless alighted there (the nearest point) on their northern migration from Africa. Although fired at and frequently disturbed, they continued on the island for some hours after our arrival, and probably were there when we left. We also observed from a dozen to eighteen Quails, a Purple Heron (and found another dead), a Squacco Heron, and several small birds, namely, two Wheatears (*Saxicola œnanthe*), three or four Yellow Wagtails, a Tawny Pipit, a Short-toed Lark, two

Wood-warblers, and a Whitethroat. Several Swallows (*Hirundo rustica*) skimmed over the ground on the top, catching flies, which there abounded. The Blue Thrush, true to its love of desolate places, was there to cheer us with its song, though rather plaintive withal. The truly indigenous birds of the rock are the Cinereous and Manx Shearwaters and the Storm Petrel (*Thalassidroma pelagica*). We did not find any eggs or young of any of these three species. In June and July the eggs and young of all three may be found. We came across several nets stretched on canes. We were told that they are used to catch the Shearwaters as they leave their holes in the rock in the evening. These birds are all, I believe, more or less crepuscular in their habits. Several of the nets had either live or dead birds of *Puffinus anglorum* entangled in them, which had been left there by the fishermen until they were wanted. Some of the feathers are used to put on hooks for Bonito, Mackerel, &c., and the flesh of the birds is sometimes employed for baiting basket-traps for catching fish. We did not see any Storm Petrels or Cinereous Shearwaters on the island this trip; but on our passage back to Malta under sail, with a fresh breeze from the north-west, we repeatedly fell in with small flocks of them, either floating gracefully on the water or shearing the surface in the manner peculiar to these birds. I must not omit to mention that a large kind of land snail (*Helix candidissima*) was very abundant on Filfla; indeed so much so, on the high level ground, that it was impossible to take a step without crushing dozens of them. On gaining this part of the island, one of our party started a Rabbit (grey), and shortly afterwards another (of a reddish colour), but failed in obtaining either. On making a second ascent after lunch, another Rabbit, or one of the two seen at first, was started and shot. It was a female, tolerably fat, notwithstanding the little herbage the rock affords. While searching for objects of natural history, we were not a little surprised to find here a fragment of iron shell, and lower down a couple of 40-lb. Armstrong shot. It appears that H.M.S. Marlborough had been using the island as a target. In one of the shot the leaden casing was nearly all stripped off; in the other it was very little injured.

When leaving Filfla about 5 P.M., a cutter-yacht bore up for the island. Finding there were friends on board, we pulled alongside, and took three or four of the yachting party ashore in our boat. Wishing them good sport, we then took a fresh departure, and, hoisting our sail, made for the mainland, if I may so call it, which we reached in about an hour, amusing ourselves by the way in expending our remaining powder and shot at the Shearwaters (*Puffinus cinereus*), that appeared in considerable numbers. I suppose the other Shearwater (*Puffinus anglorum*) is more crepuscular, as in my frequent visits to the island, and excursions round the coast of Malta, I never met with it flying in the daytime, whilst *Puffinus cinereus* was almost always to be seen.

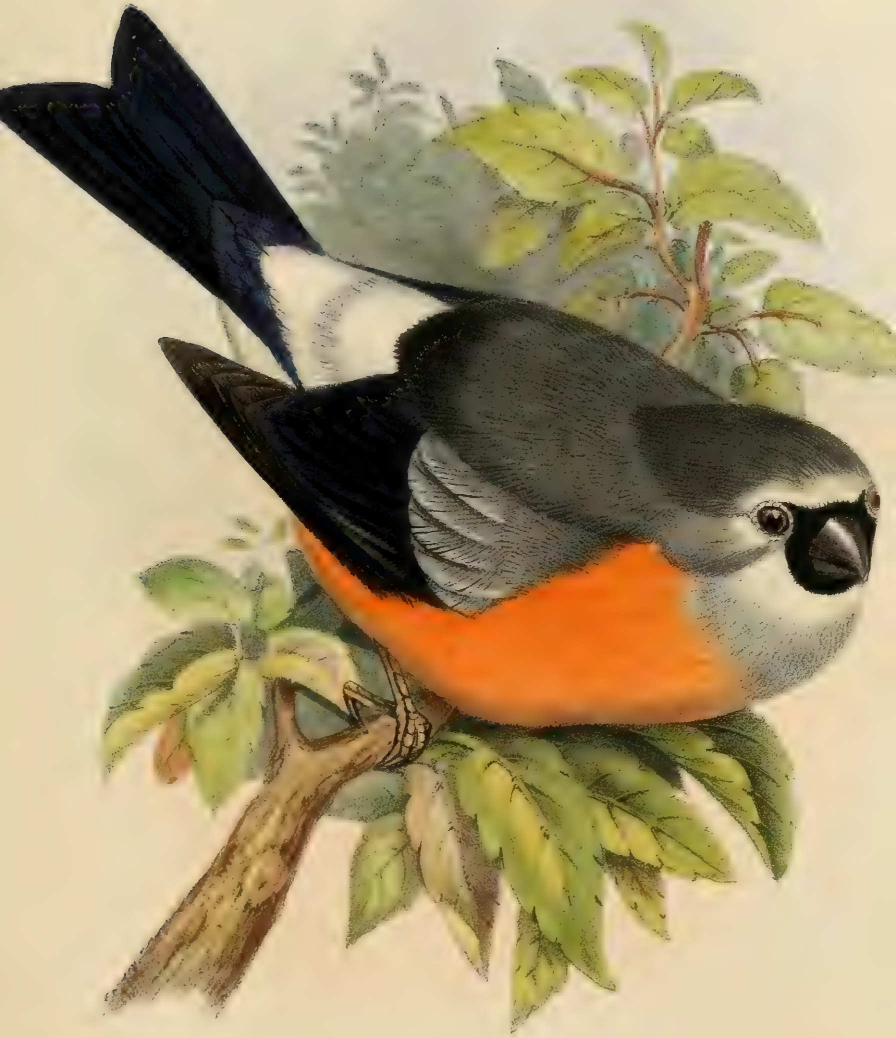
In concluding this brief notice of Filfla, I will say a word as to its geological features. From a cursory examination, it appears to me to consist chiefly of the upper formation of Malta—the coralline limestone of Capt. Spratt, R.N.; and the whole island seems to have sunk considerably since the period when it first emerged from the sea. It probably at one time was joined to Malta; but now a deep channel, three or four miles wide, separates it. On the day we visited it, a strong current was setting through the channel from the south-east, in a contrary direction to the wind. Below the upper stratum is a stratum of marl, in which are imbedded a good many *Pectines, Terebratulæ,* and other fossils. It is impossible to ascertain how far this stratum extends downwards, from the immense masses of limestone that have become detached from the top, and lie in endless confusion all round the base of the island, and may be detected on the sea-bottom to a considerable distance off the shore, which is entirely made up of their débris. On the side facing Malta, a large portion of the island fell away during the great earthquake that devastated Candia in 1856, which was severely felt all over Malta and Gozo. It is said that, ever since this landslip, a great diminution in the number of Pigeons breeding on the rock has been observed. The noise made in its descent into the sea, I am assured, was distinctly heard on the opposite coast of Malta. In many places deep fissures and cracks may be seen in the superincumbent limestone, caused by the action of the sea and weather on the soft substratum, thus bringing into effect the law of gravitation. No doubt the island will continue to diminish, until at length it will disappear beneath the waves from which it sprung,—the fate of an adjacent island now covered with 15 feet of water, and known to the fishermen as the "sunken Filfla." On Filfla is found a tolerable supply of water, slightly brackish, but sufficiently sweet to be eagerly sought after by the thirsty fishermen, who resort there in the heat of the day to take their siesta. The water trickles from the side of the rock, and in one place is collected in a large earthenware basin left by the fishermen for this purpose under the shade of a reclining rock, where even in the height of summer it issues cool and limpid. The reason of this is evident. The water is absorbed in the rainy season by the superlying limestone, and permeates slowly through it, as if through a dripstone, until it comes upon the impervious clay, when it is turned off in a horizontal direction. A thick stalactitic crust has formed on the face of the rock, rising to the height of many feet. An enthusiastic collector of natural curiosities of my acquaintance was once nearly paying dear for attempting to gratify his wish of carrying away a piece of this incrustation. Applying his geologist's hammer to it, an immense slab of stalactite was dislodged at the blow. Fortunately, he was enabled by a rapid and vigorous leap to escape being crushed by the falling mass. A corresponding depression to that of Filfla, but to a still greater depth in some places, has occurred on the Maltese coast opposite. This downthrow may be traced for several miles along the line of coast, and serves to show the connexion that doubtless once existed between the mainland and the outlying Filfla rock.

XXXIV.—*Note on the Genus* Pyrrhula.

By Edward Blyth, C.M.Z.S., &c.

(Plate X.)

Until a comparatively recent period but one species of the genus *Pyrrhula*, as it is now generally accepted, was recognized by ornithologists. The Japanese race was not considered worthy



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M & N Hanhart

PYRRHULA ERYTHACUS.

of separation by Temminck, who includes the *Pyrrhula vulgaris* in his list of European birds inhabiting Japan, published in the Supplement to his 'Manuel d'Ornithologie.' Two European races, however, differing constantly and considerably in size, have long been familiarly known to the Continental bird-catchers and dealers in Piping Bullfinches, viz. "*Le Pionne*" and "*Le Double Pionne*" of the French. The former of these, which alone is met with in the British Islands, is of course the *P. vulgaris* of Ray, while the latter is probably the true *Loxia pyrrhula* of Linnæus, inasmuch as it seems to be the only one that inhabits the Scandinavian peninsula.

The first species recognized as unequivocally distinct from the preceding (which have been more or less regarded as varieties only of the same species) was the *P. erythrocephala* of Vigors. This was described, with other birds from the Himalayan region, westward of Nepal, in the 'Proceedings of the Zoological Society' for 1831, p. 174, and figured in Gould's 'Century of Himalayan Birds,' published soon afterwards.

In the more eastern Himalayas (Nepal, Sikhim, and Bootan) another strongly marked Bullfinch, of more sombre colouring than the rest, occurs. This was first made known by Mr. Hodgson in the 'Asiatic Researches' in 1836 (vol. xix. p. 155), under the name *P. nipalensis*. Much more recently, in the 'Proceedings of the Zoological Society' for 1857, Mr. Gould has described a *P. aurantiaca* from Kashmir, which, with the two last and also the Japanese race or species, have been figured in his grand publication on the Birds of Asia.

Lastly, a fourth Himalayan species was briefly described, in the last volume of 'The Ibis,' in an extract from a letter which I addressed to the Editor, under the name *P. erithacus* *. This bird was shot by my friend Lieut. Beavan, of the late 63rd B. N. I., on Tongla Mountain, on the frontiers of Sikhim and Nepal, at an elevation of 10,000 feet above the sea-level. One specimen only was obtained, which is here figured, and the female is still a desideratum. Examples of *P. nipalensis* were procured in the same locality. It does not appear that *P. nipa-*

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* In the description given of this species (Ibis, 1862, p. 390, line 1), the word "*bill*" should be substituted for "belly."

lensis has been observed westward of Nepal; and to the eastward of that province the *P. erythrocephala* would seem to be uncommon.

The species of true *Pyrrhula,* at the present known to me, are accordingly the following:—

1. P. NIPALENSIS, Hodgson, As. Res. xix. p. 155; Gould's Birds of Asia, pt. v.

Hab. Nepal, Sikhim, Bootan.

2. P. ERITHACUS, Blyth. (Plate X.)

Hab. Mountains on the borders of Nepal and Sikhim.

3. P. ERYTHROCEPHALA, Vigors, P. Z. S. 1831, p. 174; Gould's Century, pl. 32; Birds of Asia, pt. v.

Hab. W. Himalaya., Nepal; rare in Sikhim and Bootan.

4. P. AURANTIACA, Gould, P.Z.S. 1857, p. 222; Birds of Asia, pt. 10.

Hab. Kashmir.

5. P. GRISEIVENTRIS, Lafresnaye, Rev. Zool. 1841, p. 241; *P. orientalis,* Schlegel, Faun. Jap. Ois. pl. 53; Gould's Birds of Asia, pt. v.

Hab. Japan.

6. P. COCCINEA, De Selys; *P. major,* Brehm; *Loxia pyrrhula,* Linn.

Hab. Europe (not the British Islands); Azores.

7. P. VULGARIS, Ray, Gould's Birds of Europe, pl. 209.

Hab. Europe (inclusive of the British Islands), but not Scandinavia?

XXXV.—*Notes on the Ornithology of Northern Japan.*

By ROBERT SWINHOE, F.Z.S.

A CASUAL notice in 'The Ibis' (1859, p. 205) of two new species of *Lusciniopsis,* described by Mr. Cassin in the 'Proceedings of the Academy of Natural Sciences of Philadelphia' for 1858, pp. 191–196, has recently led me carefully to peruse the article there referred to. As the avifauna of Japan necessarily lies within the scope of the ornithology of Eastern Asia, to which I particularly devote my attention, I would solicit permission to add a few remarks to the interesting papers already given on this subject by Captain Blakiston (Ibis, 1862, p. 309, and 1863, pp. 97–100).

Captain Blakiston, in his first paper, refers to the article on Japanese birds in Perry's 'Expedition to Japan' (vol. ii. pp. 219–235), but he neglects to add to his Hakodadi list one bird in particular which Mr. Cassin there notes as for the first time observed in Yesso. This is the *Accipiter gularis*, Temm. The occurrence of this small Hawk in the northernmost island is interesting. With regard to such wandering creatures as *Lobipes hyperboreus*, their discovery in Japan is nothing astonishing, as we have already observed them periodically abundant on the Chinese coast.

Mr. Cassin's paper in the Philadelphian 'Proceedings' is entirely devoted to a collection of birds made at Hakodadi, concerning which I have the following remarks to make.

No. 4, *Passer montaninus*, Pall.? The bill and feet of the Tree-sparrow (so-called) of Hakodadi are noticed as much stronger than those of French specimens. I have specimens from several parts of China varying greatly in these peculiarities, even in birds from the same locality, and therefore cannot regard them as other than individual variations.

No. 6, *Alauda japonica.* The Japanese Lark is doubtless a Wood-Lark, and I think future observation will prove it to be a tree-frequenting species. In form of bill and in many respects it is very similar to the European *Alauda arborea*, L.

No. 11, *Anthus japonicus*, T. & S. This is the first bird not noticed by Captain Blakiston. I cannot help thinking that it will turn out to be the winter plumage of *Anthus cervinus*, Pall., which is a winter visitant to South China, and probably retires to Japan and North China to breed.

No. 13, *Lusciniopsis japonica.* This is undoubtedly the *Locustella ochotensis*, Middendorff, 'Sibirische Reise,' which von Schrenck, in his 'Amurland,' wrongly considers identical with *L. certhiola*, Pall., a much larger bird. Of this species Captain Blakiston also procured a specimen, and in his first paper referred it by mistake to *Calamoherpe cantillans.* In his second paper, at my suggestion, he corrected the mistake (Ibis, 1863, p. 98). His specimen agrees with another that I procured from Amoy during its winter migration, and both these correspond entirely with the description and excellent figure in Middendorff's work. I think a reference to the plate in the 'Sibirische Reise' will convince Mr. Cassin of the truth of my assertion; but I cannot well understand what induced that able ornithologist to place this and the following form (two such unmistakable *Locustellæ*) in the genus *Lusciniopsis*, which Prince Bonaparte proposed for the reception of that delicate-footed bird the *Pseudoluscinia savii*, or Savi's Warbler.

No. 14, *Lusciniopsis hendersonii*, appears to answer well to my *Locustella macropus* (P. Z. S. 1863, p. 93), that being probably the bird noted from Amoorland by von Schrenck as the European *Locustella*, of which it doubtless is the closest Eastern representative. If really the same (and I strongly suspect them to be so), my name must sink into a synonym, and the species stand as *Locustella hendersonii*.

No. 19, *Sitta sibirica*, Pallas.

Sitta roseilia, Bp., noted by Captain Blakiston in his first list (p. 322), is here quoted as *S. sibirica*, from Pallas's name *Sitta europæa*, var. *sibirica*. Mr. Cassin makes the same remark as Captain Blakiston does in his second paper, on the identity of this form with the *S. uralensis*, Licht.

No. 20, *Squatarola helvetica*, L., is included in Cassin's list, as also is *Charadrius morinellus*, L. The former is well known from Eastern Asia; but surely the latter must refer to the allied form *C. mongolicus*, Pall., though Cassin appears rather positive as to the identity.

No. 23, *Scolopax solitaria*, Hodgs.

The Snipes have been very little studied, and are not at all well known. The Great Snipe, procured by Captain Blakiston from Hakodadi, was the Australian large species *Gallinago australis* (Lath.), and certainly not *G. solitaria*, Hodgs., of India.

No. 24, *Totanus brevipes*, Vieill.
No. 25, *Totanus glottis*, L.
No. 26, *Tringa magna*, Gould.
No. 28, *Tringa minuta*, Leisler.

These would all be naturally expected to occur, as they have also been found on the Chinese coast by myself and others.

No. 29, *Numenius,* about the size of *N. longirostris,* but with shorter bill, smaller than *N. major* or *N. arcuatus.* It is not stated, however, whether this species has a white or a barred rump. If the latter, it would then be the *N. australis,* Gould, which is common in North China and Amoorland, and which we should expect to find in Japan *en route* to Australia. The *Numenius tahitiensis* with the barred rump, allied to *N. phæopus,* procured from Hakodadi, and noted in Perry's 'Expedition,' vol. ii. p. 228, is very probably the same as the *N. uropygialis,* Gould, of Australia, which occurs throughout the Indian Archipelago, the Philippines, and Formosa. In the latter island, as I have reason to believe, it breeds.

The two remaining birds of Cassin's list are also new to the Hakodadi locality—*Limosa lapponica,* L., and *Hæmatopus ostralegus,* L. The latter bird is well known from Amoorland and China; but the record of the former is certainly interesting, if really correct. The long-legged *Limosa melanura,* L., occurs plentifully in India, and its range has been traced across Eastern Asia into Australia; but the short-legged form is not noted as an Indian bird. In China we get only the closely allied *L. uropygialis* of Australia, which is always to be distinguished by its barred instead of white rump. I suspect, therefore, on closer examination it will be found that the Hakodadi specimens are of the Australian species, which probably, with the Curlew and Snipe, breed in Mantchurian latitudes, and, returning to winter in Australia, touch at the Japanese shores.

XXXVI.—*Notes on Birds breeding in the Neighbourhood of Sydney.* By E. P. Ramsay, Esq., of Dobroyde.

[Continued from p. 180.]

4. The Rock-Warbler (*Origma rubricata,* Gould, B. Austr. iii. pl. 69).

This bird may always be found in the neighbourhood of gullies and ravines, especially where there is running water. It seems to give preference to the rocky side of steep gullies, where it may be seen running over the rocks uttering its shrill cry, entering into the crevices under the low shelving rocks, and reappearing again many yards in advance. It is a very pleasing and lively little bird, and seems to love solitude. I have never seen it perch upon a tree, although I have spent several evenings in watching it. It runs with rapidity over the ground, and over heaps of rubbish left by the floods, where it seems to get a good deal of its food. Sometimes it will remain for a minute on the point of a rock, then as it were falling over the edge, repeat its shrill cry, and dash off again into some hole in the cliffs.

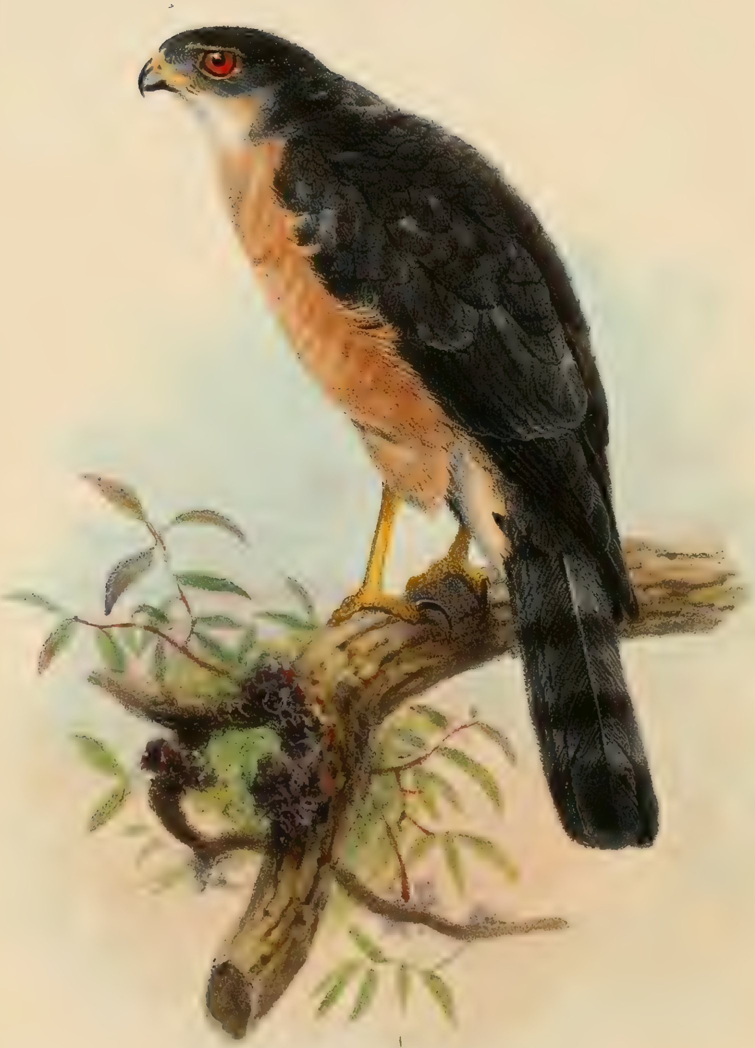
The nest is of an oblong form, very large for the size of the bird, with an entrance in the side about two inches wide. It is generally suspended under some overhanging rock, and is composed of fibrous roots interwoven with the webs of spiders, the birds having a preference for those webs which contain the spiders' eggs, and that are of a greenish colour. The mass does not assume the shape of a nest until a few days before it is completed, when a hole for entrance is made, and the inside warmly lined with feathers; however, even when finished it is a very ragged structure, and easily shaken to pieces. The birds take a long time building their nests: one I found on the 6th August, 1861, was not finished until the 25th of the same month; on the 30th we took three eggs from it. This nest was suspended from the roof of a small cave in the gully of George's River, near M'Quarie Fields, and was composed of rootlets and spiders' webs, warmly lined with feathers and opossum-fur; it contained three eggs, of a pure and glossy white, each egg being 8½ lines in length by 6½ in breadth. (Sometimes the eggs are 9, but more often 8 and 8½ lines long). They are very similar in appearance to those of Latham's Grass-Finch (*Amadina lathami*).

The breeding-time lasts from August to December, during which time two broods are raised.

I have never found more than *one* nest or one pair of birds near the same part of the gully; and I do not think they will make their nests near each other, much less under the same rock.

5. The WEDGETAILED EAGLE (*Aquila fucosa,* Gould, B. Austr. i. pl. 1.

So much has been said upon the habits of this bird in Mr. Gould's work, that I shall not take up time with any remarks



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upon it here, but simply make a few observations upon the nest and eggs, as I see Mr. Gould has had no opportunity of doing so, not having been able to procure the eggs. Although I have myself frequently found the nests of these birds, yet the difficulty of getting at them has made the eggs comparatively rare in collections. The nests are easily found; for, indeed, they are large and conspicuous. They are often three feet high, and consist of a mass of sticks piled up between the forks of the topmost branches of the larger *Eucalypti*, or placed at the end of a leaning bough. The lower part of the nest is made of thick sticks, smaller ones being used for the top, and the whole lined with twigs and grass. The first eggs I saw were taken in August 1860, and were given to me by Mr. James Ramsay, at Cardington, a station on the Bell River, near Molong. They were taken from a nest which Mr. Ramsay had found, by a black boy who *stepped* the tree. The nest, he states, was placed upon a fork near the end of one of the main branches of a large box-tree (*Eucalyptus*, sp.?). It was fully seventy feet from the ground, and no easy task to get at it. This nest was about $3\frac{1}{2}$ feet high, by 4 or 5 broad, and about $1\frac{1}{2}$ foot deep, lined with tufts of grass and with down and feathers plucked from the breasts of the birds, upon which the eggs were placed. The eggs are two in number, nearly round, and very thick and rough in the shell. One egg is 3 inches long by $2\frac{3}{8}$ broad, the ground-colour white, thickly blotched and minutely freckled with rust-red, light yellowish brown, and obsolete spots of a lilac tint. The other egg is nearly all white, having only a few blotches of light yellowish brown, and some fine dots of light rust-red; it is $2\frac{7}{8}$ inches in length by $2\frac{4}{8}$ in breadth.

XXXVII.—*On* Accipiter stevensoni, *a New Species of Hawk from China.* By J. H. GURNEY, M.P., F.Z.S., &c.

(Plate XI.)

In introducing to the readers of 'The Ibis' a Chinese Sparrowhawk which I believe to have been hitherto undescribed, and in now describing this species from specimens in the Norwich Museum, I have taken the opportunity of designating it by the name of my friend Mr. Henry Stevenson, the Honorary Secretary of that Institution, an accomplished ornithologist, and one to whose assistance, in the study of the birds of prey, I am in many ways much indebted.

Before proceeding to the description of this interesting little Hawk, I may quote the following observations respecting it, for which I am indebted to the kindness of my friend Mr. Swinhoe.

"In my rambles about Honkong and Canton (of which I wrote an account in 'The Ibis' for 1861) I procured a small *Accipiter*, which was unfortunately lost before being identified. It seemed to me at the time distinct from *A. soloënsis*; and a specimen lately received from Macao bears out my former suspicions. Of this same species Mr. Fleming, R.A., procured at Tientsin a fine male example, which, together with the Macao specimen, has been placed in the Norwich Museum.

"This small Hawk I found pretty common about the woods near Canton, and in the Island of Hongkong; at the former place it was breeding (see Ibis, 1861, p. 25). In my 'Formosan Ornithology,' under the head *Micronisus gularis* *, I have again alluded to the occurrence of this bird in China; and to these two notes I must refer the reader for all the information I at present can offer about it. The specimen procured from Macao was in skin, and I was therefore unable to take any observations as to its appearance in a fresh state. I note, however, that I have set down the irides as 'golden yellow,' whereas on the ticket Mr. Fleming has attached to his bird they are given as 'red.'"

"Perhaps in these small Hawks, as in the Owls, the irides deepen as the bird matures.—R. S."

The dimensions of the two specimens referred to by Mr. Swinhoe (and which I may designate as specimen A from Pekin, and specimen B from Macao) agree accurately together, if allowance is made for the skin from Macao having been somewhat contracted during the process of preparation, and are as follows:—

Total length in inches.	Wing from carpal joint to tip.	Tail.	Tarsus.	Middle toe and claw.
$11\frac{1}{4}$	$6\frac{3}{4}$	5	$1\frac{3}{4}$	$5\frac{1}{2}$

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* See *anteà*, p. 213.

The fourth primary is the longest, the third and fifth nearly equal (the third being slightly longer in B, and the fifth in A), the next in length is the sixth.

In specimen A, the colouring of the plumage may be thus described :—

All the upper parts are slate-coloured, with the exception of the pure white oval spots which in this, as in most other Sparrow-hawks, are apparent on the interior tertiary feathers when the plumage which overlaps them is partially removed. The colouring of the upper part of the head, of the nape, and of the shoulders is of a darker hue than that of the rest of the upper surface of the bird.

The tail has four transverse bands of this darker colouring, which are very apparent, besides a fifth, which is much less distinct in its character, and which is also hidden by the upper tail-coverts ; these bands extend over all the tail-feathers except the two outer ones, the bands on which are nine in number and narrower, as well as being much less distinct than those on the other feathers of the tail.

The throat is of a pale yellowish white, with very narrow dark shaft-marks running down some of the feathers ; the breast, abdomen, and thighs are fawn-coloured ; the sides are of the same hue, but somewhat darker and brighter. The under side of the wings about the carpal joint is also tinged with fawn-colour, interspersed with dark transverse marks of slaty brown. The under tail-coverts are pure white.

Mr. Fleming notes the irides of this individual as "dark red," and the cere and tarsi "yellow." Specimen B (which is apparently a slightly less adult bird) only differs from specimen A in having the abdomen and thighs marked with faint transverse bars of a darker fawn than the intervening plumage.

The sex of these two specimens has unfortunately not been noted ; but I conceive them to be males, the first, A, fully, and the second, B, nearly adult.

The collection of the Norwich Museum also contains three skins which appear to me to be, in all probability, females of the same species : of these, specimen C is from China ; but from what part of China I am unable to ascertain. Specimen D is from Singapore. Specimen E is from Java, and perhaps belongs to a slightly larger local race; this example was collected by Dr. Bernstein, by whom it is marked as a female. The sex of specimens C and D has not been recorded by the collectors.

The plumage of the three specimens C, D, and E agrees with that of A and B, except that the whole of the breast, abdomen, and thighs in C, D, and E are crossed by transverse bars of dark brown of about an eighth of an inch in diameter, placed at intervals of about a quarter of an inch, the intermediate spaces being white without any tinge of fawn-colour. The transverse bars on the tail are also somewhat more distinct in C, D, and E than in A and B.

The dimensions of the three specimens C, D, and E are as follows, viz.:—

Total length.		Wing from carpal joint.	Tail.	Tarsus.	Middle toe and claw.
C	12¼	7¾	5½	1¾	1¾
D	12	7¼	5½	1¾	1¾
E	14	7½	5½	2	2

I may add that the present species appears to be most nearly allied to *Accipiter rhodogaster* (*Nisus virgatus rhodogaster* of Professor Schlegel's 'Muséum des Pays-Bas'), from which, however, it differs in its shorter tarsi and toes, and in the greater length of its wing as measured from the carpal joint.

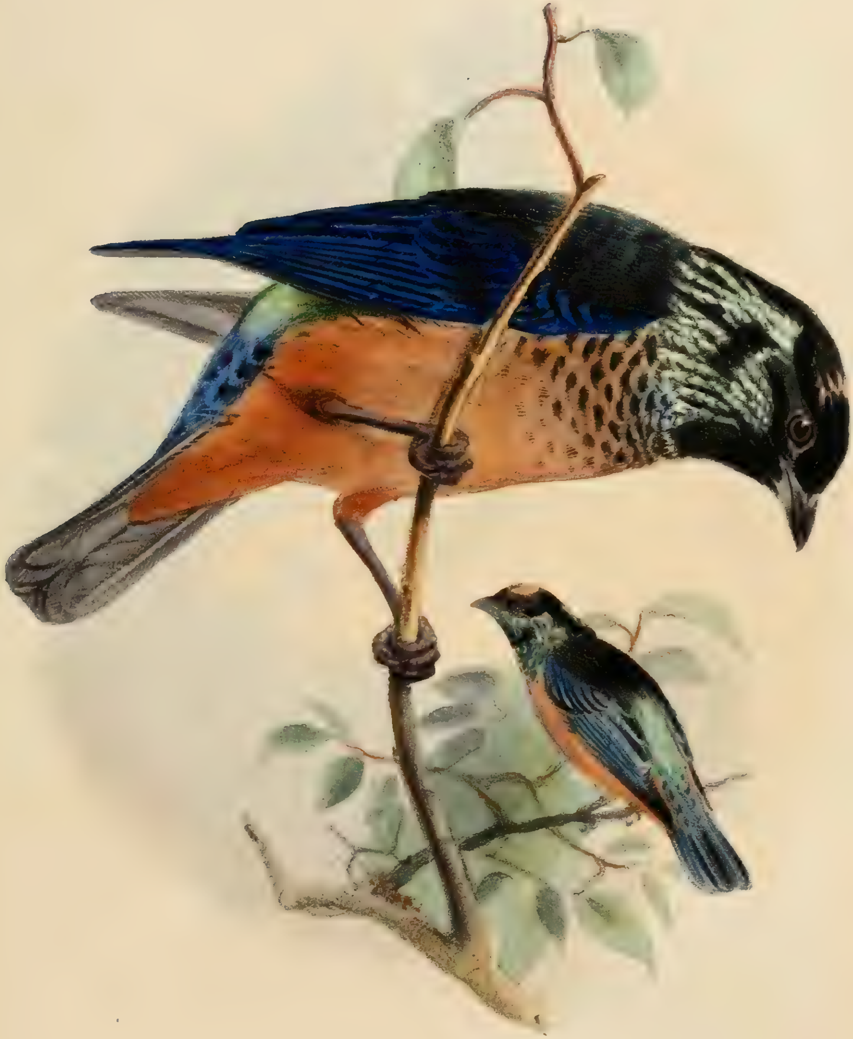
The colouring of the breast is also much paler in *A. stevensoni* than in *A. rhodogaster*, taking for comparison what I believe to be the adult males of each species.

XXXVIII.—*List of recent Additions to the Genus* Calliste.

By P. L. Sclater.

(Plate XII.)

In my 'Monograph of the birds forming the Tanagrine genus *Calliste*,' which was completed in December 1857, I included descriptions of fifty-two species of this group of birds which were then known to me. During the five years which have



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since elapsed the following additions have been made to the list:—

1. CALLISTE CYANOTIS, Sclater, P. Z. S. 1858, p. 294, from Eastern Ecuador, a species allied to *C. labradorides.* I have acquired a second specimen of this species, since my original description was published, from M. Verreaux of Paris, by whom it was received in a collection made on the Rio Napo. This specimen is more adult than the former, and induces me to alter the specific characters as follows:—

CALLISTE CYANOTIS.

Niger: superciliis latis et elongatis, dorso postico, campterio alari et corpore subtus splendide cærulescenti-viridibus; ventre medio et crisso cervinis: alarum tectricibus necnon rectricum remigumque marginibus angustis cærulescentibus: rostro nigro, pedibus fuscis.

Long. tota 5·0, alæ 2·8, caudæ 1·9, poll. et dec. Angl.

Hab. in rep. Æquatoriali (reg. sylvatica orientali).

2. CALLISTE LAVINIA, Cassin, Proc. Acad. Sc. Philadelph. 1858, p. 178, from the Isthmus of Darien, allied to *C. gyrola.* I have not yet met with this species, which was discovered by Mr. Wood, the naturalist attached to Lieut. Michler's surveying-party on the Isthmus of Darien.

3. CALLISTE FRANTZII. *Callispiza* (*Chrysothraupis*) *frantzii,* Cab. Journ. f. Orn. 1861, p. 87, from Costa Rica, a species nearly allied to *Calliste icterocephala,* discovered by v. Frantzius, of which two similarly coloured examples are in the Berlin Museum.

4. CALLISTE DOWII, Salvin, P. Z. S. 1863, p. 168, from Costa Rica. (Plate XII.)

For our knowledge of this fine new species of *Calliste* we are indebted to Capt. J. M. Dow, Commander of the Panama Railway Company's steamship 'Panama,' whose name is well known in connexion with many discoveries in the marine fauna of Central America. Capt. Dow procured a single specimen of this bird during a visit paid to San José, the capital of Costa Rica, in the early part of this year, and presented the same to Mr. O. Salvin. Mr. Salvin described the species at the meeting of the Zoological Society of London held on the 12th May last, and proposed to call it after the name of its discoverer.

Through Mr. Salvin's kindness, I have now the pleasure of giving a figure (Plate XII.) of this species, taken from the typical specimen, which will render it easily recognizable. *Calliste dowii* is allied, as Mr. Salvin has stated, to *C. nigriviridis* of New Granada, but separated from it by very trenchant characters, such as the rufous belly, black throat, &c., which render it easily recognizable on comparison. Mr. Salvin states that it was "probably obtained from the low forest-region of the Atlantic slope of Costa Rica."

5. Calliste hartlaubi. *Dacnis hartlaubi,* Sclater, P. Z. S. 1854, p. 251; *Callispiza hartlaubi,* Cab. Journ. f. Orn. 1861, p. 88, from New Granada, allied to *C. labradorides.*

I have already confessed the error of which I was guilty in classifying this bird as a *Dacnis* (see *anteà,* p. 312), and Dr. Cabanis has pointed out the same in his 'Journal f. Ornithologie,' *l. c.* The only examples yet recognized of this species appear to be those in the Bremen and Berlin collections.

XXXIX.—*Notes of a Second Visit to Madagascar.*

By Edward Newton, M.A., C.M.Z.S.

(Plate XIII.)

[Continued from page 350.]

45. *Coracopsis nigra* (Linnæus).

"Buoaz."

I believe I saw several of this species at Chasmanna, but did not obtain a specimen; they were chasing one another about the tops of the tallest trees, at least one hundred feet in height. A good many were for sale at Tamatave when we first arrived. I did not meet with the larger species, *C. vasa.*

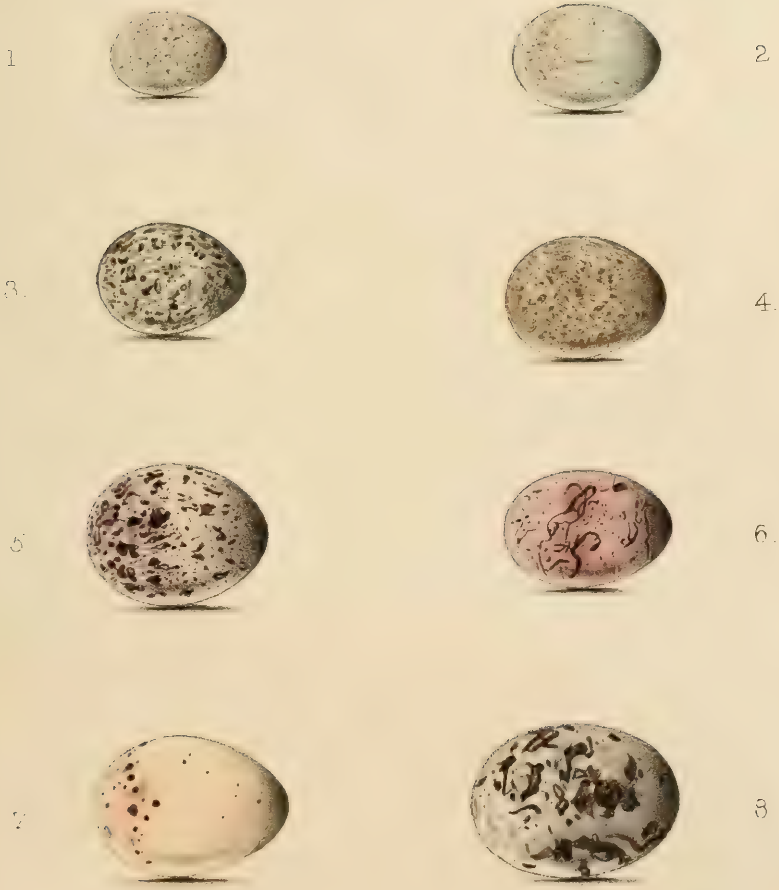
46. *Poliopsitta cana* (Gmelin).

Vast numbers are brought over yearly to Mauritius.

47. *Centropus tolu* (Linnæus).

"Tooloo."

More abundant in the neighbourhood of Tamatave and Foule



W. C. Hewitson, del.

M & N. Hanhart Imp.

EGGS FROM MADAGASCAR.

Point than at Fenerive. Its hollow cry of "Bop, bop, bop, bop," repeated perhaps twenty times, and becoming lower, slower, and more hollow as it draws to a close, is exceedingly curious, and it is difficult to tell whether it proceeds from a bush close at hand or from some place half a mile off. The bird is almost solitary in its habits, and more than a pair are seldom seen in company, the male occupying a conspicuous place on the top of some thicket, while his partner is concealed within. They appear to feed amongst the branches of bushes, and, as far as my experience goes, not on the ground.

48. *Coua cærulea* (Linnæus).

"Tashu."

I only met with it at Chasmanna, where it is tolerably common, near the edge of the forest; its note is harsh, and its name "Tashu" nearly expresses it. One I wounded in the wing was very active and cunning, climbing like a Parrot, with the help of its beak, from the ground into the thickest part of the clump of bushes in which it fell, and there concealing itself. The stomachs of those I examined were fill with the gum or resin of some tree. The flesh is particularly fat and greasy.

In the female the iris is dark brown, skin round the eye cobalt-blue, beak and legs black.

49. CUCULUS ROCHII, Hartlaub, P. Z. S. 1862, p. 224.

"Kankarfotra" (figuratively, "noisy, clamorous," Freeman's Malagasy Dictionary).

Heard several times at Chasmanna; its note much like that of *C. canorus* with a bad cold. A female killed on the 2nd October would, I think, soon have bred. In this specimen the iris was orange-yellow, beak black, with base of lower mandible yellowish; gape, skin round the eye, legs, and feet yellow; claws dusky, except those of the halluces, which are yellowish flesh-colour.

50. *Leptosomus afer* (Gmelin).

"Vorondreo" (Freeman says, "the name of a bird supposed to carry a philter with it").

Seen all along the coast.

Iris and beak dark brown; legs brown in front, behind orange, soles orange.

51. *Vinago australis* (Linnæus).

"Foningo."

As far as I could discover, the same native name is applied to all the *Columbidæ* indiscriminately, contrary to what appears to be generally the case with birds in Madagascar. This species was particularly numerous up the Fargandrafrah, generally feeding, in flocks of from six to ten individuals, on the fruit of a species of *Ficus*. Their flight is slow and heavy for Pigeons.

Iris light blue; beak horn-colour, basal half lake-pink; legs, feet, and claws yellow. There appears to be no distinction between the colours of the sexes.

52. *Turtur picturatus* (Temminck).

"Foningo."

I did not meet with this bird elsewhere than on the coast.

Iris yellowish brown; beak pinkish horn-colour; nostrils and skin round the eye and feet lake-red.

53. *Numida tiarata*, Bonaparte.

I saw one or two up the Fargandrafrah, and one near Soamandrikazay.

54. *Margaroperdix striata.*

"Tro-tro" (its call when disturbed).

Common wherever rice has been planted. I once found seven in a small patch not above two acres in extent, but they did not get up together. Many are snared, and sent over here alive; some of them have been turned out, but I do not think they increase. They are very dry, tasteless birds, and without any flavour of game.

55. COTURNIX COMMUNIS, Bonnaterre.

I am indebted to Mr. Caldwell for a skin of this species. It was brought to him alive, along with a few more, at Antananarivo, where it was said not to be uncommon. The specimen thus obtained (an old male) differs from European examples in being much more highly coloured.

56. *Turnix nigricollis* (Gmelin).

"Kibo."

Frequents dry long grass, lies very close, not getting up till almost trodden on: in flight it resembles a Crake more than a Quail; and it may be remarked that the structure of the sternum is somewhat Rail-like.

In the male the iris is very light yellow*, beak bluish grey, legs greyish brown, claws yellowish.

57. *Glareola geoffroyi*, Pucheran.

"Veko-veko" (so called from its cry).

It was not until the 24th September that I met with the Pratincoles. Previously to this time I had passed the spot to the north of Tamatave, where Dr. Roch, in November of the preceding year, had found them (*anteà*, p. 169), without seeing one; and my belief is that they had not then arrived on this part of the coast. From their appearance when I saw them near Hivondrona, the end of September, I have no doubt they would shortly have bred.

In the male the iris is brown, beak black, base vermilion, claws reddish brown.

58. *Charadrius geoffroyi*, Wagler.

On the 9th September, one specimen from a flock of about a dozen was killed by Mr. Maule on the sands between the village of Hivondrona and the mouth of the river of the same name.

59. *Charadrius tenellus*, Hartlaub.

"Kiboranto" ("the little thing by the water").

Tolerably common near the mouth of the Hivondrona, and on the sands near Foule Point.

In a young male the iris was brown, beak black, legs yellowish. In a female, apparently adult, the legs were lead-colour.

60. *Strepsilas interpres* (Linnæus).

Seen on the sands at Hivondrona on the 9th September, and on the sea-shore near Foule Point on the 16th.

61. *Ardea purpurea*, Linnæus.

"Langorovalafa."

Not uncommon, and tame.

Iris yellow; beak and cere greyish yellow; upper mandible dusky; legs in front dark brown, behind yellowish.

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* Dr. Roch says (*anteà*, p. 169), "Iris black." He probably examined a female.

62. *Ardea* —— (?), sp. indet.

On more than one occasion I saw a large white Heron, about the same size as the preceding species, but never got a shot at one.

63. *Ardea bubulcus*, Savigny.

"Voron-ombi" (Cattle-Bird), "Voron-fotsy" (White Bird), also "Voron-kongh" (pronounced "Voron-coonche").

These birds, I was told, never breed elsewhere than on the small coral islands, covered with thick brushwood, which occur every here and there on the reef along the coast. They certainly roost there, as towards sunset, and even after, parties of from two to twenty individuals are to be seen wending their way out to sea in the direction of one or other of these islands.

Fong Island to the southward of Hivondrona, Prune Island to the northward of Tamatave, and a small one near Fenerive seem to be the favourite spots resorted to by them. The first-named must be at least eight or ten miles from the coast. I never had an opportunity of visiting any of them—no easy task, by the way, on account of the heavy swell, which makes landing dangerous, and sometimes impossible. I think they were breeding in September.

Iris and beak light yellow; legs greenish yellow (in the younger birds they are brown); toes brown.

64. *Ardea comata*, Pallas.

On the 26th September we saw a pair of these birds as we were ascending the Fargandrafrah, and I obtained one, a female. The eggs in its ovary were large.

Iris yellow; beak horn-colour; naked skin between the eye and the beak yellowish; skin round eye, base of lower mandible, and legs greenish yellow.

65. *Ardea atricapilla*, Afzelius.

"Tambakoratsy" (literally, "bad tobacco," so called as the bird is not eaten and is considered worthless).

Not uncommon on the Hivondrona.

Iris of two circles, the inner yellow, and the outer red; upper mandible black, lower greenish yellow; a yellow stripe from the eye towards the nostrils.

66. *Ardea podiceps* (Bonaparte).

The only specimen I saw was killed by Mr. Maule near Soamandrikazay, on the 24th September.

67. *Lophotibis cristata* (Gmelin).

Probably migratory on this part of the coast, as by the middle of September it had not arrived in the neighbourhood of Foule Point, at which place Dr. Roch had found it in November of the preceding year (*anteà*, p. 171).

Capt. Anson killed one near Tranomaro, a few miles to the southward of Hivondrona, in the beginning of October.

68. (?) *Numenius madagascariensis*, Lichtenstein.

On the 9th September, on the sands near the mouth of the Hivondrona, I saw two birds of this genus, which appeared to me to be larger than, and the note to differ from that of the Whimbrels. They were very wild, and I was unable to get a shot at them.

69. *Numenius phæopus* (Linnæus).

Met with along the coast. I feel pretty sure that, in September, when most of the other Grallatorial birds were breeding, these were not. It has been a marvel to me for some time, when or where those we have at Mauritius breed. They are usually more plentiful in our summer months, from November to February, but they occur throughout the year. Those killed in July do not show the slightest trace of having just bred or of being about to do so.

70. *Tringoides hypoleucus* (Linnæus).

"Kiboranto."

Common on the Hivondrona and up the coast. The specimens obtained appeared to be all young birds. In Mauritius I have met with it from September to April only; they therefore probably go northward to breed.

71. *Rhynchæa capensis* (Linnæus).

"Rav-rav."

I killed one of two young birds at Soamandrikazay on the 24th September; it was just able to fly, and must have been hatched in the immediate neighbourhood.

To Mr. Caldwell I am indebted for an egg of this species, extracted from a bird snared near Antananarivo, on her nest, which contained one other egg.

The egg is of a pale greenish stone-colour, blotched with dark ash-grey, overlaid with irregular patches and spots of black. The long diameter is 1·46 inch, the short diameter 1·01 inch.

72. *Parra albinucha*, Is. Geoffroy.

"Voron-tsaranongy" (meaning, I believe, "the bird which struts grandly").

I shot a pair of these birds on a small pool covered with water-lilies, on which they were walking, near Fenerive. I can confirm Dr. Roch's statement (*anteà*, p. 173), that they are regarded in some places with superstitious feelings, but I could not learn why.

The bill and frontal plate are bright lead-colour.

73. *Rougetius bernieri*, Pucheran.

"Chicosa."

To be heard every night on the Hivondrona. Its whistle is so like a Stone Curlew's, that I was some time before I satisfied myself that I was not listening to some species of *Œdicnemus*.

74. *Porzana pygmæa* (Naumann).

"Mena-mazo" ("red eye")

I am indebted to Mr. Caldwell for an example of this species obtained by him at Antananarivo. Iris red.

75. GALLINULA PYRRHORRHOA, A. Newton, Proc. Zool. Soc. 1861, p. 19.

"Whaytik."

To Mr. Caldwell I am indebted for skins of this species also, obtained near Tamatave. I never met with it myself, though I believe it is not uncommon.

76. PORPHYRIO ALLENI, Thomson, Ann. and Mag. Nat. Hist. x. p. 204.

"Hisetrikia."

On 9th September I killed a specimen of this beautiful species in some bullrushes near the mouth of the Hivondrona.

The colours of the beak, frontal plate, and legs were exceedingly bright when the bird was fresh.

Iris red; frontal plate pea-green; beak and legs bright scarlet.

77. *Fulica cristata,* Gmelin.

"Oetrikia."

Mr. Caldwell obtained specimens of this species near the capital, where it is common.

78. *Phœnicopterus* —— ? sp. indet.

I was told by a trader of Foule Point that a Flamingo was killed there some five years previously.

79. *Nettapus auritus* (Boddaert).

"Voroncoua."

I met with it at Fenerive. In the adult male the iris is dark brown, bill bright yellow, nail black, feet black. In a younger specimen the bill was only yellowish, and the hinder part of the tarsi and outer edge of the outer toes the same. Unlike most other Ducks, the trachea of the male in this species is of a very simple form, there being scarcely any enlargement whatever at the lower extremity.

80. *Dendrocygna viduata* (Linnæus).

"Tsiri-tsiri," on the coast.

This is the only species of Duck I have seen wild in Mauritius; but here it has been undoubtedly introduced, large quantities being brought over alive from Madagascar in nearly every bullock-ship. In its habits, when kept in confinement, this and *D. arcuata* are far more domestic than any other Ducks with which I am acquainted. Long after their wings are grown (the feathers having been pulled out), they will remain in the little yards in which they have been confined, even though they be in the middle of the town of Port Louis,—a very small pond, the society of domestic Ducks and Geese, and, I presume, regular meals being apparently sufficient causes to make them remain. Occasionally they will take a short flight in the evening, but return before the next day. This practice they will continue for months, and it is only the desire for a more quiet spot for nesting that induces them to forsake their quarters.

81. **DENDROCYGNA ARCUATA** (Cuvier).

Not nearly so common on the coast as the last; but numbers are caught alive on a marsh about sixty miles to the north-west of Tamatave. I believe they are all snared. They are brought to Mauritius in larger quantities, perhaps, than *D. viduata,* and when here have the same opportunities of escaping; but I never saw or heard of a wild one.

82. *Podiceps pelzelni,* Hartlaub.

"Vivy."

Obtained by Mr. Caldwell near Antananarivo.

83. *Sterna velox,* Rüppell.

This species was very common at Tamatave and near the mouth of the Hivondrona river, at the beginning of September; it had disappeared before the middle of the month. Iris brown; beak greenish yellow; legs and feet black; under surface of toes flesh-colour.

84. **STERNA MELANORHYNCHA,** Gould, Birds of Australia, vii. pl. 26 (?).

Mr. Caldwell obtained a specimen of this little Tern at Tamatave on the 6th July[*].

85. *Anous* (?) ——? sp. indet.[†]

Three young Noddies were brought to Mr. Maule; he was told they had been taken at Isle aux Prunes, off the roadstead of Tamatave: as they could not have flown, they must have been bred there[‡].

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[*] This specimen appears to be identical with the species above-named, though it differs in having the forehead entirely black, and the base of the bill orange-red. It is probably in breeding-plumage, while all Mr. Gould's examples were obtained in winter.—ED.

[†] The example sent is quite immature, so much so that it seems doubtful whether it is a true *Anous.*—ED.

[‡] I may here mention that, last month, Capt. L'Estrange, R.A., found a young Noddy, just hatched, and a couple of broken egg-shells, on the sea-shore, close to Fort William, on the south-west side of the harbour of Port Louis. Carriages and people were constantly passing over the ground, and the bird appeared to have been trodden on. It is singular, in such a public place, the egg was ever hatched.

86. *Halieus* ——— ? sp. indet.

I saw a pair of Cormorants on the small river at Vodotra, about five or six miles to the northward of Tamatave, both on going to and returning from Fenerive. I did not get a shot at them.

87. PLOTUS ——— ? sp. indet.

On a lake (an artificial one, I believe) near Fenerive I saw what I am certain was a Darter; he was generally perched on the top of a dead tree in the water, long out of shot. Unfortunately there was no canoe on the lake; and as I had not time to get one carried there, I had to leave him, sitting with his wings extended to catch the last rays of the setting sun, and his long, fine, snake-like neck and head stretched out; but I trust some day to become on closer terms of intimacy with him.

I cannot conclude these notes without expressing my thanks to Mr. Ferdinand Fiche, of Soamandrikazay, not only for the hospitable reception he accorded us and the means he put at our disposal for furthering our wishes, but also for the valuable assistance he gave me in ascertaining the native names of various birds. No one who has not tried knows how difficult it is for one totally ignorant of such a language as Malagasy to render accurately in writing the sounds conveyed by a native, who is unable to read or write, and whose pronunciation is probably not pure, but only that of a *patois*. Mr. Fiche very kindly wrote in my note-book the native names of most of the birds obtained.

[*Note*.—Mr. Hewitson has been so obliging as to execute, at considerable inconvenience to himself, the annexed plate (Plate XIII.), representing some of the eggs obtained by Mr. E. Newton on his second visit to Madagascar. The species thus figured, all it is believed for the first time, are—

Fig. 1. *Nectarinia souimanga*.
Fig. 2. *Pratincola sibylla*.
Fig. 3. *Calamoherpe newtoni* (sp. nov.).
Fig. 4. *Gervaisia albospecularis*.
Fig. 5. *Hypsipetes ourovang*.
Fig. 6. *Ellisia typica*.
Fig. 7. *Dicrurus forficatus*.
Fig. 8. *Caprimulgus madagascariensis*.—ED.]

XL.—*Recent Ornithological Publications.*

1. English Publications.

Although 'The Naturalist on the Amazons'* is not specially addressed to the ornithologist, Mr. Bates's volumes will receive a hearty welcome from every lover of nature, whatever particular branch of animal or vegetable life he may turn his attention to. Mr. Bates left England, in company with Mr. Wallace, in 1847, and remained nearly twelve years, without intermission, at various stations on the banks of the Amazon, between Para and San Paulo. During this time he devoted himself without ceasing to natural history, and collected specimens of nearly 15,000 species of various classes of animals, the far greater proportion of these being insects, to the study of which class Mr. Bates has principally paid attention. It is much to be regretted that Mr. Bates's collection of birds, of which about 360 species were obtained, has been dispersed without any complete record† having been preserved of their names and localities. Unfortunately, too, Mr. Wallace lost the greater part of his collections by shipwreck on his return-voyage to England, so that the opportunity of making a valuable contribution to ornithological geography which might have resulted from the careful record of the localities of the specimens of these two diligent collectors has been lost. This is the more to be regretted as we have few authorities on the ornithology of the Amazons, except Spix and Martius and the somewhat unsatisfactory labours of MM. Castelnau and Deville; and it will probably be many years before two naturalists so capable as Messrs. Wallace and Bates will again devote themselves to the task.

Though, as we have already stated, entomology is Mr. Bates's *forte*, numerous passages of especial interest to the ornithologist will be found throughout his volumes; and those who admire the products of Mr. Wolf's pencil will find an additional attraction in some of the woodcuts, especially the frontispiece to Vol. I., where the author is represented as beset by a noisy group of Curl-crested Toucans (*Pteroglossus beauharnaisi*), excited by the cries of one of their wounded companions.

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* The Naturalist on the River Amazons, a record of adventures, habits of animals, sketches of Brazilian and Indian life and aspects of nature under the Equator during eleven years of travel. By Henry Walter Bates. 2 vols. London, 1863. Murray.

† A list of one of Mr. Bates's collections of birds from Ega and the Rio Javarri will be found in the 'Proceedings of the Zoological Society' for 1857, p. 261.

The 'Edinburgh Philosophical Journal' for July last contains a description, by Sir William Jardine, of a West African species of Spine-tailed Swift (which has been hitherto confounded with *A. sabini*), under the name *Acanthylis hartlaubi*. The bird is the same as that described by us, at the Meeting of the Zoological Society on the 26th of May last, as *Chætura cassini**. Sir William Jardine quotes the notice of our paper having been read from the report given in the 'Athenæum' of May 30th, but remarks that he "cannot recognize such notices as descriptions, or as any authority for a name." To this we may reply that it has been the general practice of naturalists to consider papers read before learned Societies, and subsequently published in their "Proceedings" and "Transactions," as bearing date from the time of their being read; and that if this practice be followed, the name *hartlaubi* must give way to that of *cassini*. On the other hand, there can be no doubt that the former name is that under which the first *published description* of the bird appears. We trust that our two respected brethren of the British Ornithological Union at Bremen and Philadelphia, who are so nearly concerned in the matter, will not fall out upon this grave question of precedence.

In the 58th Number of Mr. Bree's 'Birds of Europe,' published on the 1st of July last, the history of the "Birds of Europe not observed in the British Isles" is terminated, and an Appendix containing some additional species, omitted from the body of the work, commenced. At the beginning of this Appendix we are startled by the appearance of a new European species of *Accipiter*, proposed to be called *Accipiter gurneyi*. The specimens upon which this supposed new species is founded are those procured at Beyrout by Mr. Louis Lauretta, and noticed in Mr. Gurney's article in the first volume of this Journal (p. 390) as *Accipiter*

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* See P. Z. S., 1863, p. 205.

sphenurus. Mr. Bree seems to think it out of the question that they can be referable to Rüppell's bird, the dimensions given by Rüppell being considerably less than those of the Syrian specimens. But knowing how great is the variation in the dimensions of skins according to the way in which they are prepared, we cannot allow that this single fact is sufficient to prove the distinctness of this bird. Having a second time examined the skins and referred to Rüppell's plate, we are still inclined to believe that the Syrian skins are in all probability referable to *Accipiter sphenurus* of Rüppell. In every respect *except size* they agree well with Rüppell's figure; and Mr. Bree would, we think, have done better to defer describing his "new species" until he had had an opportunity of comparing them with authentic examples of Rüppell's bird.

"The claim of *Falco gurneyi* to a place in the European avifauna," Mr. Bree informs us, "rests at present on a single immature specimen received by Mr. Gurney from Athens."

Mr. Blyth's Report on additions to the Zoological collection of the Asiatic Society of Bengal, published in the first number of that Society's Journal for the present year (p. 73 *et seq.*), contains some notes on the species of birds collected by Mr. W. T. Blanford, of the Indian Geological Survey in Burmah, amongst which are several new species or distinguishable local races—*Mülleri-picus feldeni, Picus blanfordi, Sturnopastor superciliaris, Turnix blanfordi,* &c. *Rhodophila melanoleuca,* the new Saxicoline form lately discovered by Dr. Jerdon on the Ganges (cf. Ibis, 1862, p. 386), was also met with by Mr. Blanford in Arakan.

Mr. Blyth's Report also contains descriptions of the novelties lately obtained by Lieut.-Col. Tytler in the Andaman Islands, which have been already noticed, *anteà*, p. 119. The specific name of the new *Dendrocitta* is *bayleyi* (scr. *bayleii*), and not *bazlei,* as printed in p. 119.

Dr. Mouat's volume on the Andamans* concludes with an

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* Adventures and Researches among the Andaman Islanders. By Fred. J. Mouat, M.D. London, 1863. Hurst and Blackett.

Appendix by Mr. Blyth, in which a summary of the little we yet know of the natural history of this group of islands is given. Of the class Aves sixty-one species are enumerated, of which eight are, as far as is hitherto known, peculiar to the Andamans, namely,

Hæmatornis elgini, *Blyth.*
Mülleripicus hodgei, *Blyth.*
Picus andamanensis, *Blyth.*
Dendrocitta bayleii, *Tytler.*
Oreocincla infra-marginata, *Blyth.*
Copsychus albiventris, *Blyth.*
Osmotreron chloroptera, *Blyth.*
Euryzona canningi, *Tytler.*

Three others, *Palæornis erythrogenys*, *Temenuchus erythropygius*, and *Geocichla innotata*, are common to the Andamans and Nicobar Islands. The remainder are species found also on the neighbouring mainland the eastern coast of the Bay of Bengal. Lieut.-Col. Tytler, a well-known Indian field-naturalist, being now in command at Port Blair, will, we have little doubt, soon render our knowledge of this interesting fauna much more complete.

Mr. Sabine Baring-Gould's new work upon Iceland * contains besides various interesting passages on the birds met with during his travels scattered through its pages, an essay on the ornithology of that country, from the pen of our valued contributor Mr. Alfred Newton, which those who know the extent of Mr. Newton's acquaintance with the birds of Arctic Europe and America will hardly require to be told forms an exhaustive *résumé* of the present state of our knowledge of this subject. Mr. Newton commences with a short historical summary of works relating to Icelandic ornithology, followed by a list of authors and their writings. He then proceeds to give a sketch of the avifauna of Iceland in the following terms:—"The character of the avifauna of the country, as might have been expected from its geographical position, is essentially European, just as that of Greenland has American tendencies. Indeed, dismissing from our consideration the species of purely Polar type, which are common to the whole Arctic region, there are, as far as my knowledge extends, only four or five which make Iceland their home without inhabiting some other part of continental Europe. These are the Iceland Falcon, the Northern Wren (which, however, does occur as a resident in the Færoes), the Iceland Ptarmigan, the Iceland Golden-eye, and the Harlequin Duck. The first is by most ornithologists of the present day recognized as distinct from the true Gyr-Falcon; and though the differences between them are but slight, I believe no one has ever observed the characteristics of the Scandinavian form in an Icelandic specimen. The second has been but lately separated from our own Common Wren, which is a bird as well known throughout the greater part of the Continent as in this country; but I believe the separation is deserved. The third, the Ptarmigan, certainly differs in some respects very considerably from the bird which occurs in Scotland and Norway, and much more nearly resembles the form found in Greenland. The fourth and fifth are most unquestionably distinct species; and both are found breeding over a good part of the Arctic portion of the New World, while neither occurs in the rest of Europe, except accidentally. I am only aware of one species which does not properly belong to Europe, and which yet occurs frequently in Iceland without breeding there; this is the Greenland Falcon."

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* Iceland: its Scenes and Sagas. By Sabine Baring-Gould. London, 1863. Smith, Elder, & Co.

Mr. Newton then gives a brilliant sketch of the more noticeable features of the ornithology of Iceland, as they strike the eye of the observant traveller, which we would also gladly transfer to these pages did space permit. This is followed by a systematic list of the birds which have been hitherto recognized with certainty as occurring in the country, with notes on each species. Mr. Newton enumerates

Accipitres	6	altogether 89 species as having been observed in Iceland—
Passeres	14	
Gallinæ	1	
Grallæ	21	
Anseres	47	

a list which shows at a glance the richness of the Natatorial and the poverty of the Passerine Orders in these northern climes. Concerning the Gare-fowl (*Alca impennis*), without doubt the most interesting member of the Icelandic avifauna, Mr. Newton has nothing to add to the elaborate account of this bird which he has already contributed to this Journal*.

With regard to the prospects of future explorers in this country, Mr. Newton is "inclined to believe that Iceland offers a field of considerable promise to the ornithologist; and though it is not to be at all expected that any previously undescribed species of birds will reveal themselves, yet many possessing great interest commonly frequent both the coast and the interior. Besides which, it is not beyond the bounds of probability that one or two of those whose places of retreat during the nesting-season, if not altogether unknown, are still shrouded in much mystery, may be found breeding on some lonely Icelandic 'heiði.' Of these I might mention the Knot and the Sanderling, and perhaps even the Grey Plover (*Squatarola helvetica*), though this latter bird of almost ubiquitous occurrence does not seem hitherto to have been met with in the island, as likely to reward the search of some future investigator."

2. German Publications.

The first number of Wiegmann's 'Archiv für Naturgeschichte' for the present year contains (p. 119) the commencement of an article by Messrs. Philippi and Landbeck, entitled "Beiträge zur Fauna von Peru," in which several new birds are described. (1) *Synallaxis striata,* from Arica, allied to *S. ægithaloides* and *S. maluroides.* (2) *Chlorospiza erythronota,* a species of *Phrygilus* allied to *P. diuca* and *P. speculifer.* (3) *Pitylus albociliaris,* from the Peruvian Cordilleras. (4) *Sterna lorata,* allied to *S. minuta* of Europe; (5) *Sterna frobeenii*; (6) *Sterna comata,*—all three from the Bay of Arica, in Peru. (7) *Leistes albipes.* These supposed new species are all from a collection made by the late Herr Frobeen in Peru.

3. Scandinavian Publications.

Though apparently published three years ago, we have only lately seen 'A Review of Swedish Ornithological Literature'†

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* See The Ibis, 1861, p. 374.

† Ofversigt af Sveriges Ornithologiska Litteratur, af Johann Otto von Friesen. Stockholm, 1860. 8vo. pp. 44.

—a most useful little work. Its title-page, which we have not given in full below, declares it to be the thesis, or act, publicly read by its author before the University of Upsala for a degree in philosophy. Herr von Friesen seems to us to have discharged his task extremely well; and his pamphlet is a valuable index to Swedish ornithology. It is not possible for such bibliographical lists to be at a first attempt quite comprehensive; and here we have noticed, on but a cursory examination, two omissions:—the first edition of Mr. Wheelwright's 'Comparative List of the Birds of Scandinavia and Great Britain,' printed in 1852,—a curious circumstance, for this edition was published with the author's name, while the second edition, printed in 1859, which Herr von Friesen includes, was published anonymously. The 'Travels of Acerbi' also, full of errors as they are, we should have thought merited mention; but we heartily congratulate the land of Linnæus on producing another hopeful scion, and we feel sure we shall, before long, hear more of her new Doctor of Philosophy.

It is a real pleasure to us to notice so meritorious a treatise as Sysselmand H. C. Müller's "Bird-Fauna of the Færöes"*, in the fourth volume of 'Scientific Communications,' just published by the Natural-History Union of Copenhagen. Herr Müller, who enjoys equally the confidence of his fellow-countrymen (as shown by the fact of his representing them in the Danish Parliament) and the esteem of all English visitors to his native islands, has for many years past been an attentive observer of their birds; nay, more, he has almost lived among the latter. The results of his experience, for which we have been long waiting, are now before us, and prove him to be a worthy successor to those who have hitherto been the only elucidators of Færöese ornithology—Debes and Landt, Graba and Wolley.

As the language of Denmark, notwithstanding the auspicious alliance now happily existing between that nation and England, is "not commonly understanded of the people" of this country, we so much the more regret we can only make a few remarks on Mr. Müller's paper.

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* Færöernes Fuglefauna med Bemærkninger om Fuglefangsten, af Sysselmand H. C. Müller. Videnskab. Meddelels. for 1862, pp. 1–78.

One hundred and twenty-four species of birds are given as having occurred in the Færöes, of which of course the greater number are merely stragglers *: forty-four, however, certainly breed there yearly, besides three more which probably do so, and four which are believed to have done so formerly. Herr Müller's observations with regard to two supposed species (*Corvus leucophæus* and *Uria leucophthalma*) are, we think, conclusive, and we hope never to hear either of them again spoken of as a good species. Of the first he says, "As is known, there occurs here a white-spotted variety, 'Qvujt-ravnur' (white Raven), *Corvus leucophæus,* Vieill. It is sometimes found paired with the Common Raven. A few pairs of the black Raven have annually in their nest one, two, or more young which are pied. For several years I used to get annually one or two pied young from a place where a pair of black Ravens annually built; but of late years they have only had black young in the nest." With respect to the other, Mr. Müller states that it "is certainly only a variety of *Uria troile*; for I have been an eye-witness that a Ringed and a Common Guillemot have paired themselves together, and besides have seen a *ringvia* [sc. *leucophthalma*] feed a young one which a *troile* had under its wing." The remarks on fowling, the staple branch of industry in the islands, are full of interest, and show that, whatever the political merits of the M.P. for the Færöes may be, his qualifications as a cragsman and an ornithologist are beyond doubt.

The same volume of the 'Videnskabelige Meddelelser' also contains (pp. 337–339) an abstract of some observations, by Professor Reinhardt, on *Troglodytes borealis* (*vide* The Ibis, 1862, pp. 296 & 381), in which our excellent correspondent points out that all the peculiarities seized on by its describer as specific characters are not entirely to be trusted, and he suggests others as more diagnostic; but the Professor appears to think that the distinctness of the newly recognized form is well established.

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* Herr Müller does not include *Cypselus apus*, of which Mr. Wolley states that he saw a single example on one of the islands ('Contributions to Ornithology,' 1850, p. 109).

In the revived 'Kröyer's Tidsskrift,' Herr Fischer continues his "Observations on the Birds of Denmark, especially as regards Vendsyssel"*, the first part of which we before noticed (Ibis, 1862, p. 382). The paper seems to be carefully drawn up; but the district does not present any great ornithological novelty. Herr Fischer states that the Grey Partridge (*Perdix cinerea*) is decreasing in numbers, a fact which he appears to attribute to a method the poachers have of setting a spike in the nests of this species. In consequence, the hen bird, being unable to brood, continues to lay eggs. A man who had himself tried this cruel process, worthy of the country of the Vandals, assured Herr Fischer of its truth, adding that he had at last found the hen dead by the nest. The same author also contributes a paper on the "Birds of Bornholm," chiefly remarkable for a detailed account of the breeding of the Nutcracker (*Nucifraga caryocatactes*) as observed there by himself and his friends, one of whom, Pastor Theobald, has already given a short notice on the subject, which will be found in the 'Proceedings of the Zoological Society' for 1862, pp. 206–208.

4. Italian Publications.

Although we are always glad to welcome new contributors to the literature of ornithology, it is difficult to give much encouragement to Signor Benvenuti's first attempts at the description of new species of birds. It will suffice to say that this gentleman, who signs himself "Aiuto aggregato alla Cattedra di Zoologia dei Vertebrati nel Real Museo di Fisica e Storia Naturale di Firenze," sets to work to describe four Humming-birds as new without ever having, as he himself acknowledges, consulted Mr. Gould's Monograph of the group!† This would not so much matter, perhaps, if the characters given were sufficient for the recognition of the species. With regard to the supposed new Brazilian *Sylvia,* every naturalist who has paid the least attention to South American ornithology must be aware that no bird of this form occurs in the New World at all, the representative group of *Mniotiltinæ* being readily distinguishable from *Sylvia* and its allies by the want of the first spurious primary. Signor Benvenuti would have done better to have followed the good advice given to him by M. Auguste Sallé, and to have taken steps to have his birds compared with specimens in the French and English collections before describing them as new on his own authority.

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* Nogle Jagttagelser over Danmarks Fugle, med særligt hensyn til Vendsyssel, af S. C. H. Fischer.

† Descrizione di quattro nuove specie della famiglia dei Trochilidi provenienti dalla Nuova Granata e di una nuova specie di Sylvia del Brasile, di Enrico Benvenuti, &c. Firenze, 1863.

The fourth volume of the Acts of the Italian Society of Natural Sciences* contains several ornithological papers. Signor P. Lanfossi writes of *Muscicapa albicollis* and its allies, *M. luctuosa* and *M. speculigera*†, which he proposes to reunite as varieties of the same species. The same author also treats subsequently (p. 103) of the Sylvians of the genera *Calamoherpe* and *Hippolaïs.*

Signor E. Giglioli, who is now working as a student of zoology in London, contributes to the same journal an article on the geographical distribution of birds, principally translated from the Memoir on that subject published in the 'Journal of the Proceedings of the Linnean Society' for 1857.

5. American Publications.

Mr. Coues's "Review of the Terns of North America," published in last year's volume of the 'Proceedings of the Philadelphian Academy,' has been for some time in our hands, and would have been noticed before this, had space permitted it. The principal aim of the paper is to give the results of a "careful comparison of the more or less intimately related" North American and European species of this group, which the command of a very extensive series of specimens from both continents has enabled him to do. At the same time Mr. Coues has discussed other points of synonymy and relationship, upon which his thorough acquaintance with the subject well entitles him to express his opinions.

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* Atti della Società Italiana di Scienze Naturali. Milano, 1863, vol. iv.

† Intorno ad alcune sorte di Pigliamosche o Muscicape, p. 71.

The simplest and most instructive method of giving the results of Mr. Coues's paper will be a comparative Table of the European and North American species of the group:—

North America.		Europe.
Pacific coast.	Atlantic coast.	
	Gelochelidon anglica.	Gelochelidon anglica.
	Thalasseus caspius*.	Thalasseus caspius.
Thalasseus elegans.	—— regius.	
	—— acuflavidus.	—— cantiacus.
	Sterna forsteri.	
Sterna hirundo.	—— hirundo.	Sterna hirundo.
	—— macroura.	—— macroura.
—— pikii.	—— paradisea.	—— paradisea.
	—— antillarum.	—— minuta.
	Hydrochelidon fissipes.	Hydrochelidon fissipes.
Haliplana fuliginosa.	Haliplana fuliginosa.	
Anous stolidus†.	Anous stolidus.	

This list is believed by Mr. Coues to contain all the Terns known to inhabit North America. *Sterna trudeauii* of Audubon, known only from the typical specimen, may be an abnormal state of *S. forsteri*. *Sterna havelli* of the same author is believed to be "merely the adult winter plumage of *S. forsteri*."

The only ornithological paper in the 'Proceedings' of the Academy for this year, so far as we have received them, is an additional note by Mr. Coues on the North American *Ægiothi*. Additional skins of this group of birds, lately received by the Smithsonian Institution from all parts of North America, seem to show that the forms or races of *Æ. linarius*, long recognized in Europe as *Æ. holbœlli* and *Æ. rufescens*, are also present in North America. With respect to the new species of *Ægiothus* introduced in his original article upon this subject, of which we have already given a notice (Ibis, 1862, p. 187), Mr. Coues has had no reason to change any of his views, additional specimens confirming the position assumed, especially as regards *Æ. exilipes.*

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* The American bird is larger in size, and, should it be distinct, is proposed to be called *T. imperator*.

† Mr. Coues proposes the name *A. frater* for the Pacific bird, if distinct.

We must take this opportunity of acknowledging Mr. Coues's courtesy in transmitting to us specimens of the latter species and *Æ. fuscescens.*

The 'Proceedings of the Boston Society of Natural History' for October of last year contain a paper by Mr. A. E. Verrill, entitled "Notes on the Natural History of Anticosti," containing an account of the investigations made during an expedition to that island, undertaken by the author in the summer of 1861, in company with Messrs. Hyatt and Straker, "for the purpose of studying the geology of Anticosti, and making collections of fossils and other objects of natural history." The catalogue of the birds observed at Anticosti and in the vicinity contains about sixty species. The most interesting notes are those relating to the birds which breed on the rocks and shores of Anticosti. Of these the principal seem to be the Cliff-swallow (*Hirundo lunifrons*), which was breeding in large numbers at Cape Eagle "under the high overhanging limestone-cliffs," July 15th; the Long-tailed Duck (*Harelda glacialis*), which "breeds abundantly;" and the Red-breasted Merganser (*Mergus serrator*), which is "very common." Amongst the land-birds, two specimens of a species of *Passerella* were obtained, apparently distinct from the common American *P. iliaca,* and provisionally described as new under the name *P. obscura.*

Another ornithological paper by the same gentleman, of which we have received a separate copy, is a "Catalogue of the Birds found at Norway, Oxford Co., Maine"*. Short notes are given referring to each species, and some very pertinent remarks on the importance of the study of geographical distribution precede the list, which is very superior to most of the local lists which come before us.

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* Reprinted from vol. iii. of the 'Proceedings of the Essex Institute.'

XLI.—*Letters, Extracts from Correspondence, Notices, &c.*

The following letters, addressed to the "Editor of The Ibis," have been received since our last issue:—

London, July 25th, 1863.

Sir,—In the July Number of 'The Ibis,' I find a letter from Mr. Tristram, in which, after making various observations on the non-migratory habits of the Rock Martin (*Cotyle rupestris*), he says that he is unable to ascertain satisfactorily a single locality where it is *only* found in summer. Now the bird in question certainly leaves Genoa in the winter; it arrives early in March, nests in considerable numbers at *Schiena d'Asino*, where the torrent *Bisagno* has its source, and leaves in November. I am, however, inclined to think that the only reason of its migration is that Genoa does not present warm rocky nooks as Mentone does, and, moreover, is subject to very cold *maestrom* winds coming from the Alps.

I remain, yours very truly,
H. H. Giglioli.

P.S.—As an instance of the contrary occurring, namely, their not breeding in the localities they resort to in the winter, I beg to quote the following from Jerdon's 'Birds of India,' vol. i. p. 166:—"I have only seen this plain-coloured Martin on the summit of the Neilgherries and at Darjeeling, occasionally in flocks, at other times in small parties, and *only in the cold weather*. At Darjeeling they seem to be *birds of passage entirely*, as I saw them in October in immense numbers for a few days, and subsequently they had entirely disappeared."

To the Editor of 'The Ibis.'

Sir,—I have read with much interest Mr. Cochrane's account of the habits of *Cuculus glandarius*. Last winter I passed three months on the Nile, and obtained several specimens of this bird, but only one of its eggs. On our return down the river, near Farshoot (Jan. 28), I fell in with quite a colony of this Cuckoo, and shot several specimens. While I was in the act of picking up a wounded female, the sharp eyes of my Arab attendant detected an egg, which the bird had just dropped in the grass. This egg is similar in its markings to that of our Blackbird (*Turdus merula*), and in size equal to a Jay's. I *generally* found the Great Spotted Cuckoo very shy. In flight it much resembles the Sparrow-hawk, so much so that I was often deceived into shooting the one for the other. Though by no means common on the Nile, this Cuckoo seems curiously to affect certain places, and I once saw six in one "sunt" grove.

Yours, &c.,
W. J. CHAMBERS.

Chichester, July 7, 1863.

Mr. W. J. Chambers also furnishes us with the following note on the birds he noticed during his subsequent journey through Palestine:—

On entering Palestine on the south at El Arish, the bird-population appears to consist chiefly of the Chat tribe. Wheatears are very numerous, and I obtained specimens of *Saxicola stapazina*, *S. saltatrix*, and observed *S. leucomela* and others that I did not identify. Shrikes are abundant, and I obtained *Lanius excubitor* and *L. rufus*. Redstarts are common, and I observed Rüppell's Warbler (*Sylvia rüppellii*), a specimen of which, by-the-by, I shot in some low bushes in the middle of the desert between El Arish and Cairo. Of the Hawk tribe there are a great number, but having very little time for preserving, I did not shoot any. One of my friends obtained a fine specimen of the Peregrine Falcon (*Falco peregrinus*). We saw a few Quails (*Coturnix dactylisonans*), and towards Jerusalem a fair number of *Perdix græca*, Briss., which, however, owing to the difficult nature of the ground and their running habits, are very troublesome to shoot. About Jerusalem birds are scarce. I obtained Cretschmaer's Bunting (*Emberiza cæsia*), and the Blue Thrush (*Petrocincla cyanea*): I saw a few Blackbirds, which *appeared* to be precisely similar to our *Turdus merula*; a few Jays, but was unable to obtain any; I think they were *Garrulus melanocephalus*. At Jericho and in the Jordan-valley birds seem plentiful, and I regretted much that we were only allowed one night at that most interesting spot. The only bird

I brought away was a Bulbul (*Ixos xanthopygius*), which I afterwards found to be very common among the orange-groves at Jaffa. Mar-Saba was the only place where I saw Tristram's Grackle (*Amydrus tristramii*). This bird is very tame inside the convent-walls, but outside is by no means so easy of approach, and I was much vexed that I was obliged to come away without obtaining a specimen. At Jaffa we fell in with large flocks of *Merops apiaster*, but only shot three specimens, as they used to fly during the whole day at a very high elevation, and only come down late in the evening to roost among the orange-groves. I observed at Jaffa *Scolopax gallinago*, Linn., *Totanus calidris*, Bechst., and *Cuculus canorus*, Linn. Every ornithologist who has made the tour of Syria must know how difficult it is to find time for skinning specimens, and still more how difficult it is to carry them when preserved; and as I endeavoured to avoid as much as possible destroying birds that I did not intend to preserve, this must be my excuse for not giving a much longer list of the birds I obtained in the southern part of Syria.

The following extract is from a recent letter of Prof. Baird:—

"We received a nice lot of birds some time ago from near Vera Cruz, and amongst them the long-lost *Spiza leclancheri*—a lovely species. We have had considerable additions from Mexico, and a few days ago the first instalments of Mr. Xantus's new collections came to hand, after two months' delay at Panama. They were all obtained at Colima. Since then he has collected largely in the mountains around, and added much to the list. This box (No. 1) contains about sixty species, many truly North American, others peculiar; among the latter are *Crotophaga sulcirostris*, *Centurus elegans*, *Hylotomus scapularis*, *Cissilopha sanblasiana*, *Cassiculus melanicterus*, an *Icterus* very like *I. cucullatus*, but different, *I. pustulatus*, *Pitangus derbianus*, *Myiozetetes texensis*, *Myiarchus lawrencii*, &c. There is a *Pachyramphus* there, very like *P. aglaiæ* vel *affinis*, but smaller, and white beneath, except the red and an ashy shade across the breast; the head above blackish, in strong and abrupt contrast to the cinereous back and tail: also a species of *Zonotrichia*, much like *Z. mystacalis*.

"Besides these are several species from the famous Mazatlan collection, which I consider new, but have yet to publish, and of which descriptions are all ready, viz. a *Saltator*, a *Cyphorinus*, and others."

With reference to the indignant letter from "Oophilus" in the last Number of 'The Ibis,' it would seem from what we have lately learned that the compiler of the catalogue of "Rare British Birds and Eggs" which were sold by auction at Mr. Stevens's rooms on the 6th and 7th of May last, had better authority than would appear to have been the case from a perusal of our correspondent's letter, for the localities of some of his specimens. Lot 250 of this sale, as may be seen by reference to the printed catalogue (p. 18), contains "Dr. Martin Barry's List of the Birds that have bred in the Island of Arran," with some odd numbers of periodicals. This lot was purchased by Mr. J. H. Gurney, who has kindly sent us the list for inspection. It is printed on three pages, and is headed "A List of the Birds that have been observed to breed in the island of Arran, Scotland, since the year 1835, by Dr. Martin Barry, M.D., F.R.S.* Next follow the Latin names of the species, 102 in number; amongst which are inserted *Falco lagopus*, *F. gallicus*, *F. palumbarius*, *Strix scops*, *S. passerina*, *Lanius rufus*, *Regulus ignicapillus*, *Anthus richardi*, *A. rufigularis*, *Alauda alpestris*, *Fringilla spinus*, *Loxia curvirostra*, *Picus tridactylus*, *Tetrao urogallus*, *Scolopax major*, *Tringa pectoralis*, *Gallinula pusilla*, *Anas dispar*, *Sterna tenuirostris*, and *Larus ichthyaëtus*. Lastly are added certain notes in explanation of some of these strange phenomena, in the course of which we are informed that the author believes "that this is the first time that the Aigle Jean-le-Blanc (*Circaëtus gallicus*, Vieillot) has occurred in Scotland," but that he had "several times seen specimens in Ireland;" that he had just discovered his "pair of hybred [sic] Ducks, obtained in the Island of Arran, June 11th, 1847, to be Steller's Western Duck (*Somateria dispar*) of some little rarity"; that it is "strange" to find the "Slender-billed Tern (*Anous tenuirostris*) breeding so far north," but that his "pair of birds were shot on the Island of Arran and three eggs obtained June 10th, 1844;" that the "Great Black-headed Gull (*Larus icthyaëtus*) was obtained by himself on the Island of Arran, June 5th, 1844," and was "a splendid acquisition to his cabinet;" and, finally, that his last oological curiosity was "that wild bird, the Eider-duck, nesting in a washing-bowl close to an inhabited hut."

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* There is no printer's name attached to the list, nor any intimation of when or where it was printed.

It is evident, therefore, we think, *if this list is authentic*, that the localities and dates attached to the specimens in the sale-list of Dr. Martin Barry's collections were not the invention of the person who drew up the catalogue, as our correspondent "Oophilus's" letter seems to imply might have been the case, but were really taken from the deceased Doctor's printed list and note-books. We are not ourselves, however, of opinion that they are to be depended upon on this account. We do not believe that the *Circaëtus gallicus* is to be met with nailed up on barn doors in Ireland, nor that the Chestnut-breasted Goose occurs either on the Gambia or in South America. Whether Dr. Martin Barry was the deceiver or the deceived in these and other cases we cannot say, but it is only fair to the compiler of the Sale-catalogue to acknowledge that he appears to have had Dr. Martin Barry's authority for many of the impugned dates and localities.

In saying thus much, we assume that *this printed list is really the production of Dr. Martin Barry himself*, and not, as has been thought by some of our friends who have examined it, a forgery, manufactured for the purpose of selling Dr. Martin Barry's eggs to better advantage.

In reference to "Oophilus's" letter, we have also received the subjoined communication from another correspondent who veils his name under the signature "Oologicus":—

To the Editor of 'The Ibis.'

Sir,—I am desirous of making a few remarks on the able letter of your correspondent "Oophilus," printed in your last Number (p. 372). With his regrets I entirely agree; but it seems to me that he, as is the wont of persons of a generous nature, has been rather too lavish of his indignation, and has a little overcoloured his statements. It is a charge frequently made against egg-collectors, that they have been instrumental to the extinction of certain of our rarest and most interesting birds. As far as I am acquainted with the subject, the charge seems to me to be incorrect. "Oophilus" instances the Golden Eagle as a case in point. I wish simply to ask him, Who is more likely to preserve the remnant of this species in Scotland—the Highland forester to whom (solely through the demands occasioned by egg-collecting) an Eagle's nest is the source of a permanent annual income of a few pounds, or the man who has every inducement in the shape of rewards offered by his master for the destruction of Eagles, without a counterbalancing consideration of any kind? I believe, Sir, that so long as we abstain from putting the old birds to death, the occasional and judicious taking of their eggs is no more likely to exterminate Eagles than the same process to desolate our poultry-yards of their inhabitants.

"The indiscreet zeal of the *true* naturalist" has not much, depend upon it, to answer for in the way of birds. With other classes of animals it may be different. I could imagine that any very local species of insect (*Hipparchia blandina,* let us say) might be almost extirpated in a single season by injudicious captures, especially if effected before the newly emerged *imago* had been able to deposit its fertile eggs. But I will not wander from my subject, and I will leave this matter to those who concern themselves with butterflies, only in conclusion expressing my inability to comprehend the connexion between the "ruthless feats" of the unnamed friend of "Oophilus" and the presumed frauds which he is so very properly anxious to expose.

I am, Sir,
Your obedient Servant,
OOLOGICUS.

The valuable and extensive collection of birds formed by the veteran ornithologist, the late Baron F. de Lafresnaye, in his château near Falaise, is about to be sold. The administrators of the deceased are anxious to dispose of it in its entirety to some public institution or private individual. We trust they may be able to effect this, as it would be very disadvantageous to the cause of science that the typical examples of the numerous species described by the deceased Baron in the 'Revue Zoologique,' 'Magasin de Zoologie,' and other works should be dispersed all over the world and become inaccessible to naturalists. Our colleague, M. Jules Verreaux, has lately visited the collection, and, at the request of the administrators, prepared a complete catalogue of it, of which he has kindly sent us a lithographed copy. The collection contains 8446 mounted specimens, besides 210 in skins, making altogether a total of no less than 8656 specimens of birds, and forming, probably, the largest private collection in existence. It is particularly rich in South-American types, embracing nearly a perfect set of the species obtained by the late M. Alcide d'Orbigny during his South-American travels, and also numerous types of New-Granadian species. There are also some very remarkable Madagascar types in the series, such as *Atelornis squamigera, Brachypteracias pittoides,* and *Vanga xenopirostris,* the last species being, we believe, unrepresented in every other museum.

Our correspondent, Mr. Alfred Newton, begs us to state that he is deferring to our next Number the promised account (*vide anteà,* p. 376) of the late extraordinary visitation of *Syrrhaptes paradoxus,* in the hope of obtaining information which will enable him to trace the movement across the continent of Europe. We should be glad to receive any particulars that will tend to throw light on this curious subject. Meanwhile we may mention that, as we learn from Mr. Newton, this species has actually bred during the past summer in Denmark, a circumstance which renders the wholesale slaughter of it that has taken place in the British Islands still more to be regretted.

We rejoice to learn that Mr. H. B. Tristram has determined upon carrying out his long-cherished scheme of revisiting Palestine this ensuing winter. We are sure all our friends and supporters will join us in wishing him success in his proposed investigations of the Fauna and Flora of this interesting country.

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